

DATE: 03/04/00

FIG. 1

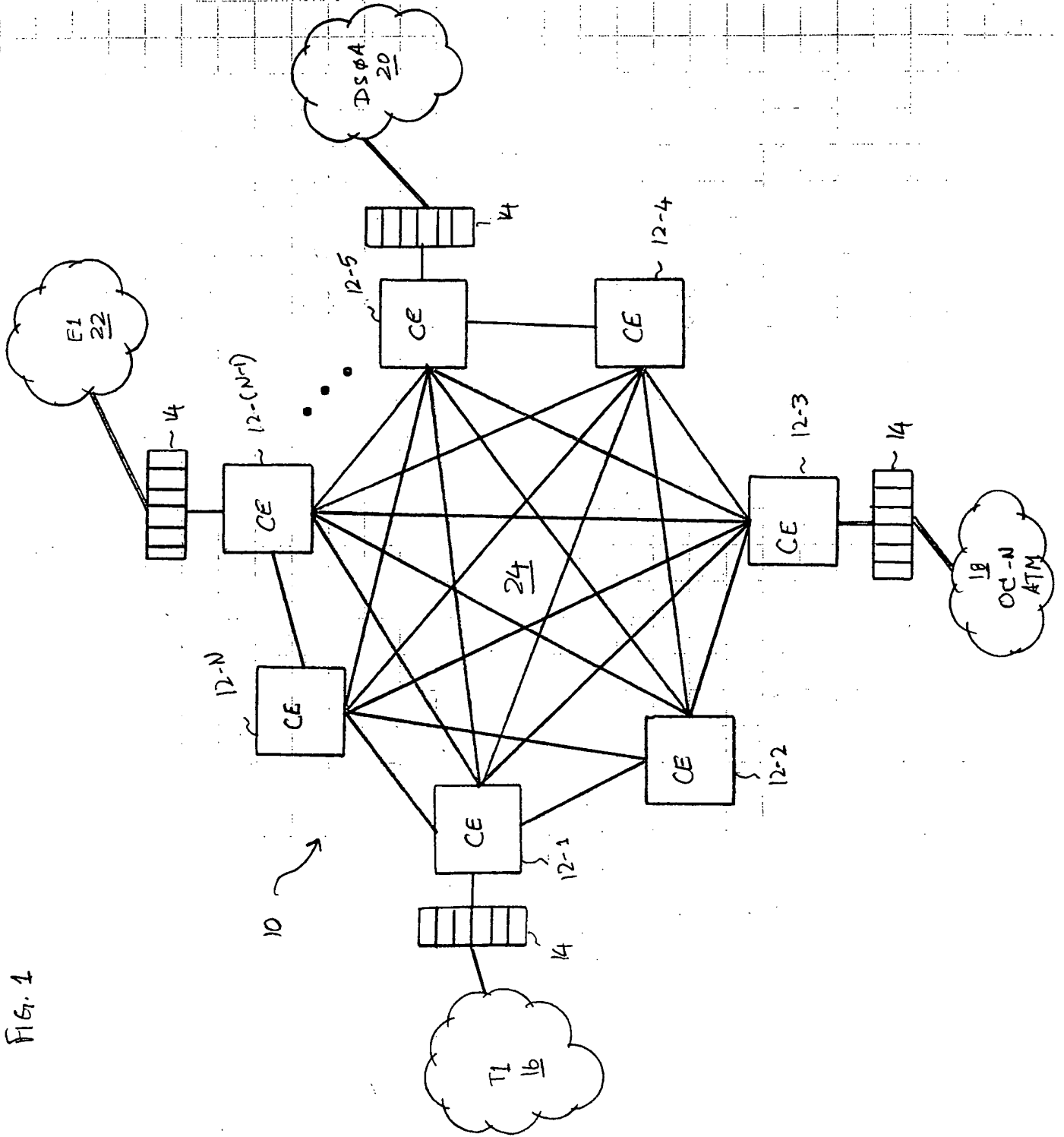


FIG. 2

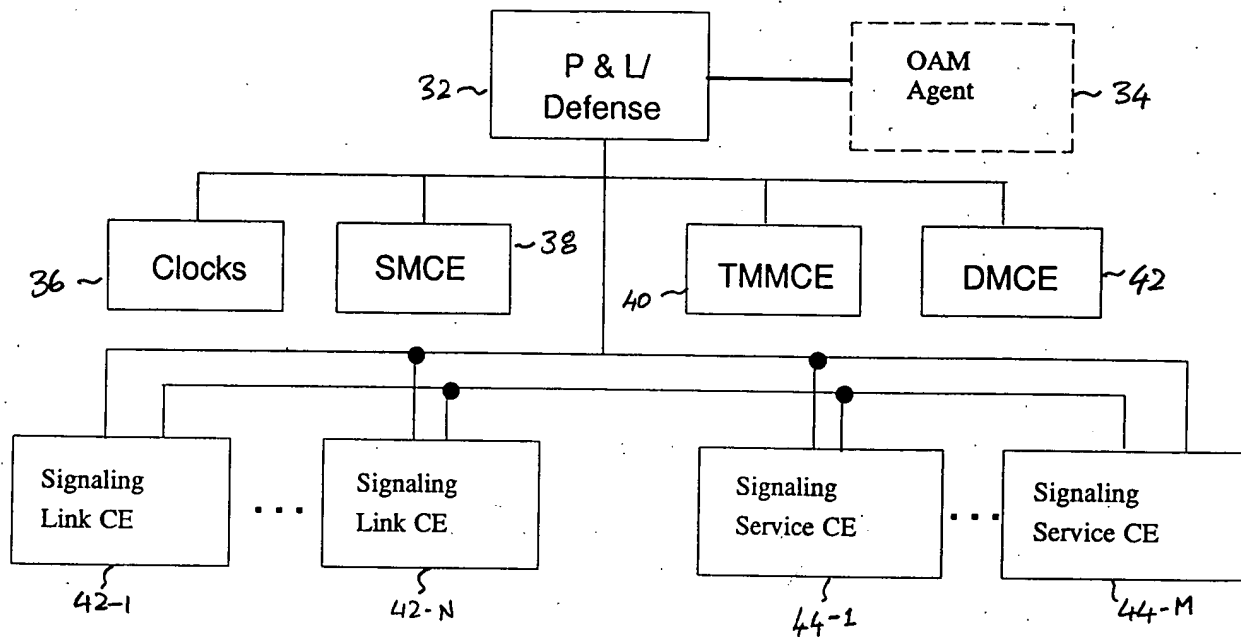


FIG. 3

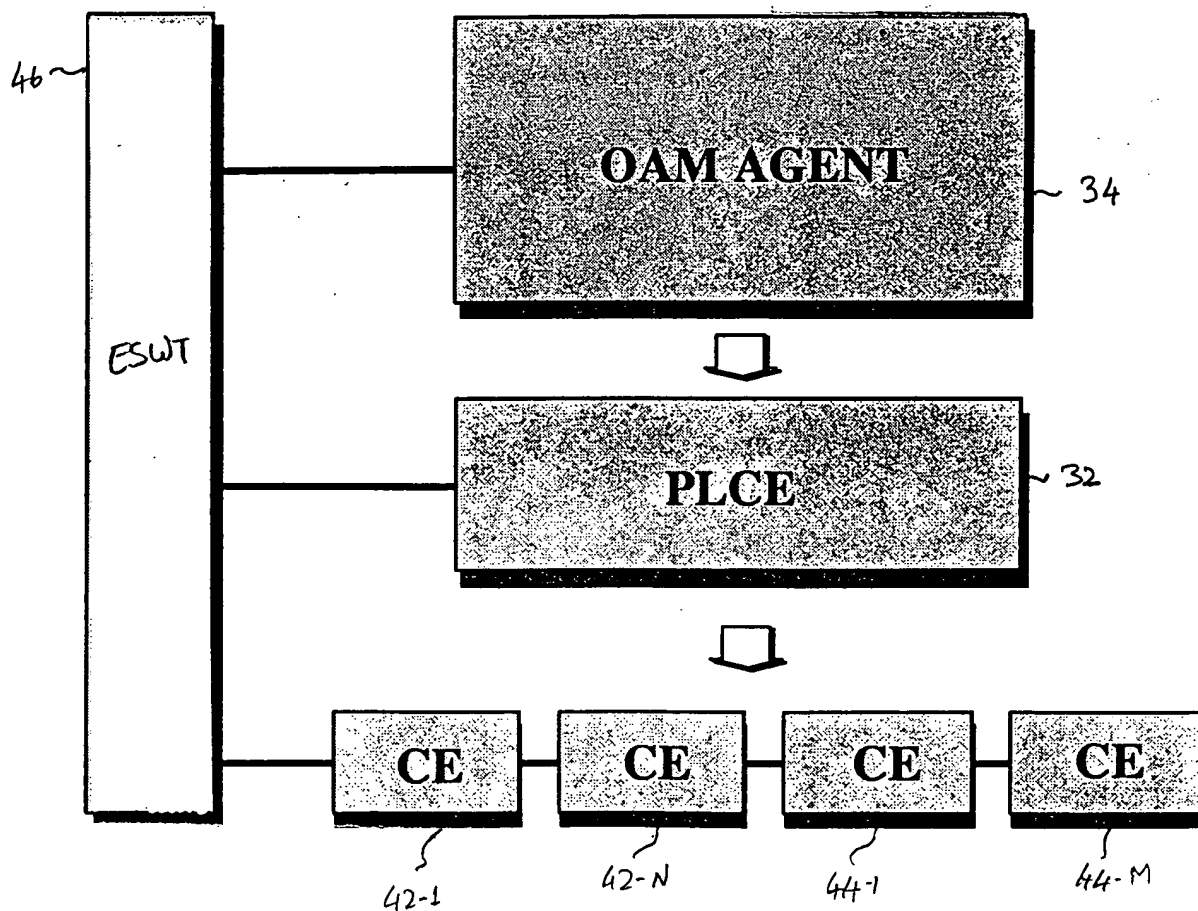


FIG. 4

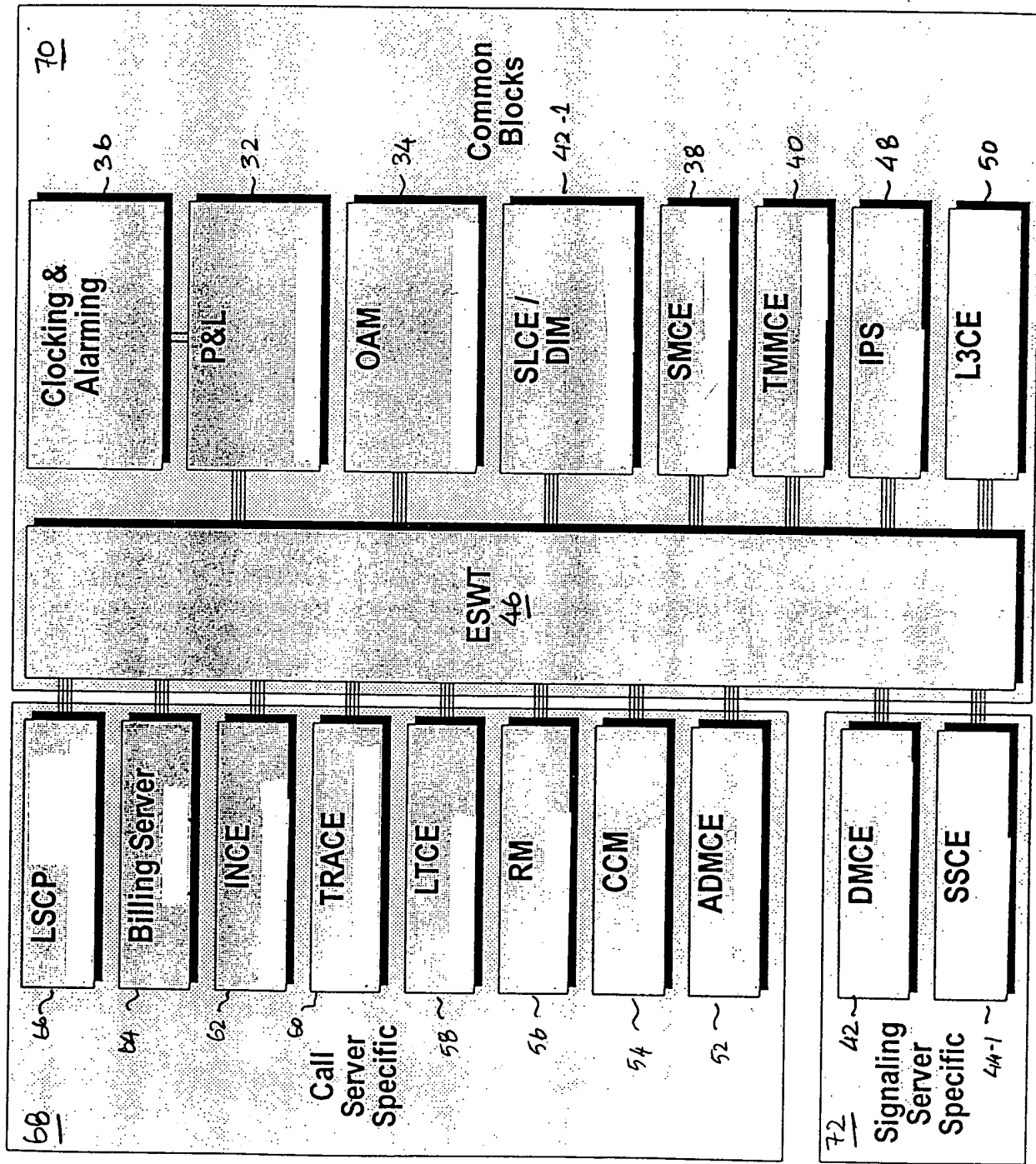
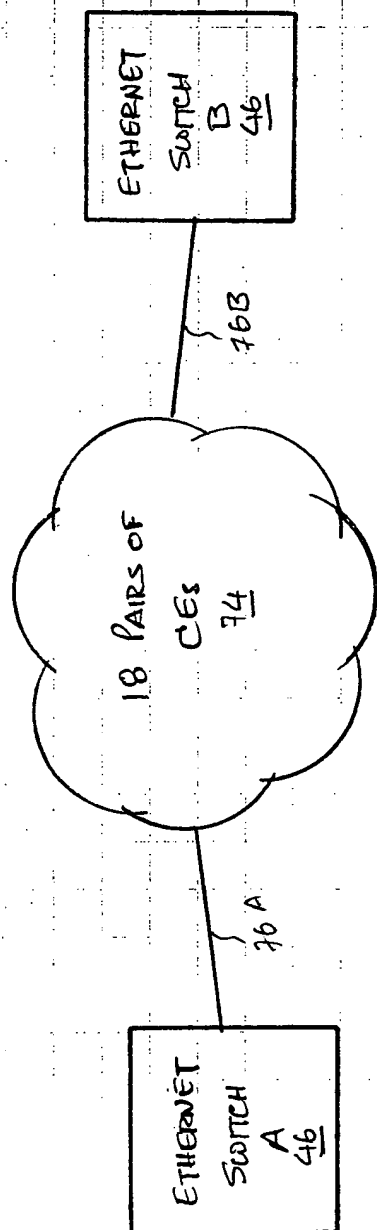
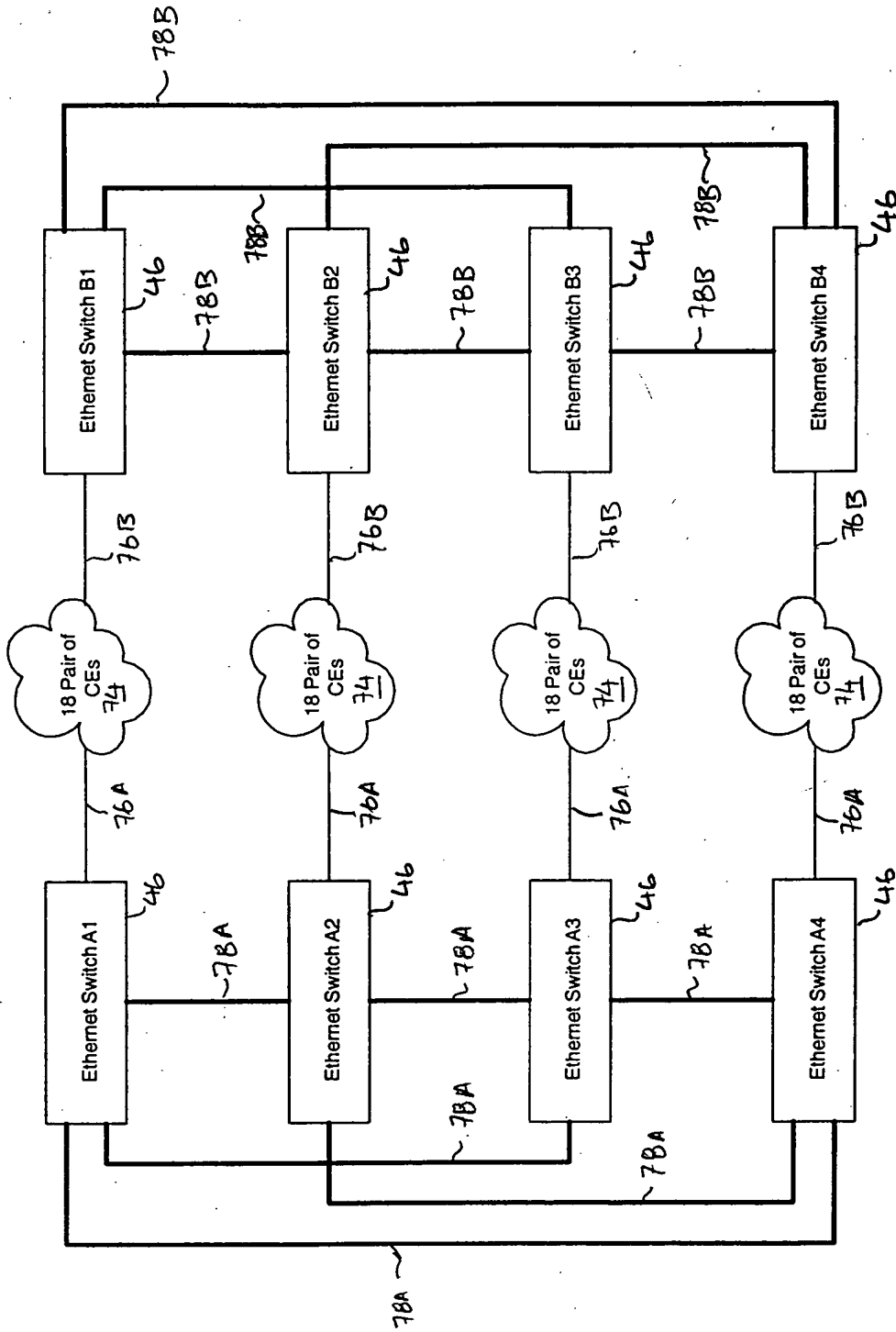


FIG. 5A



OFFICE: B0607560

FIG. 5B



DATE 03/06/01

Fig. 6

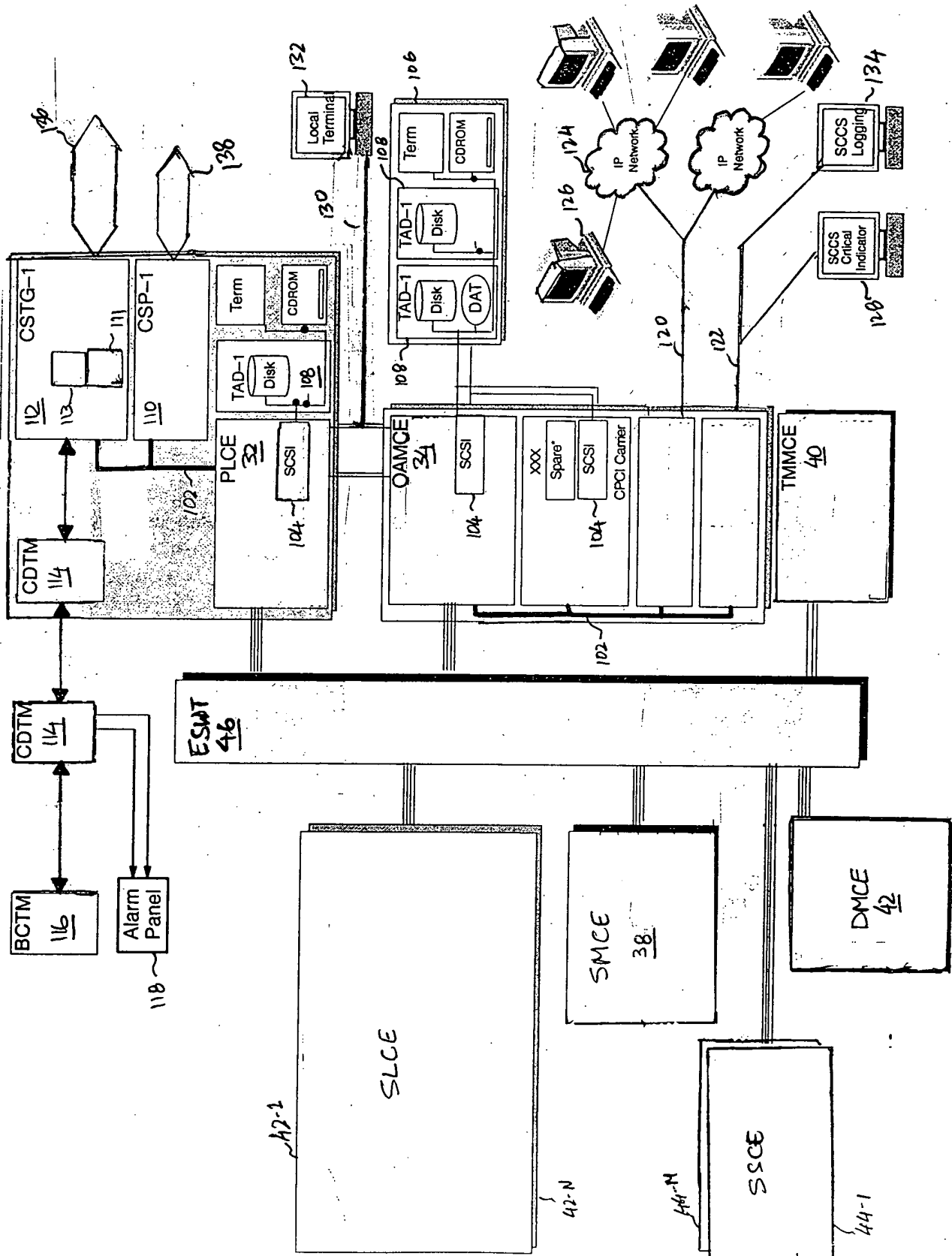


FIG. 7

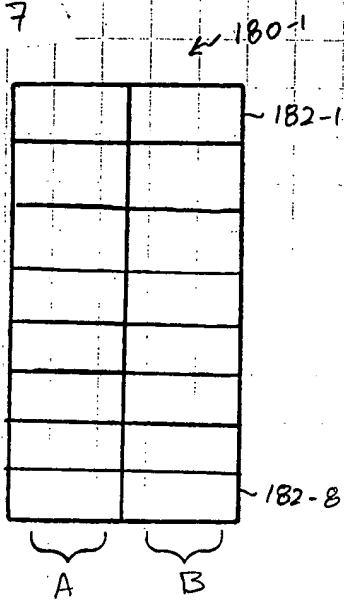


FIG. 8

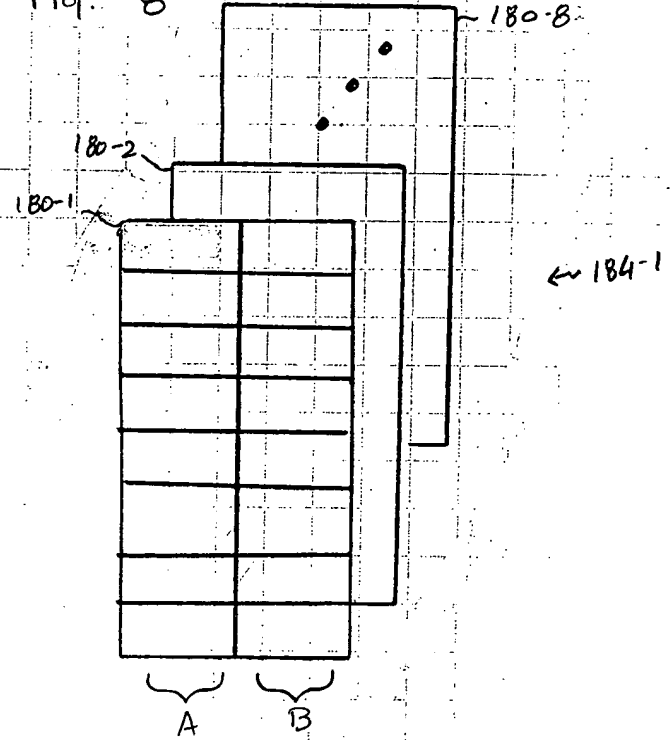
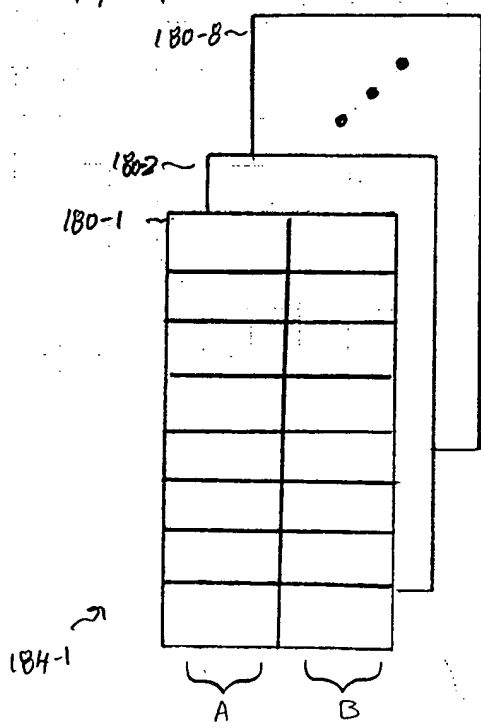
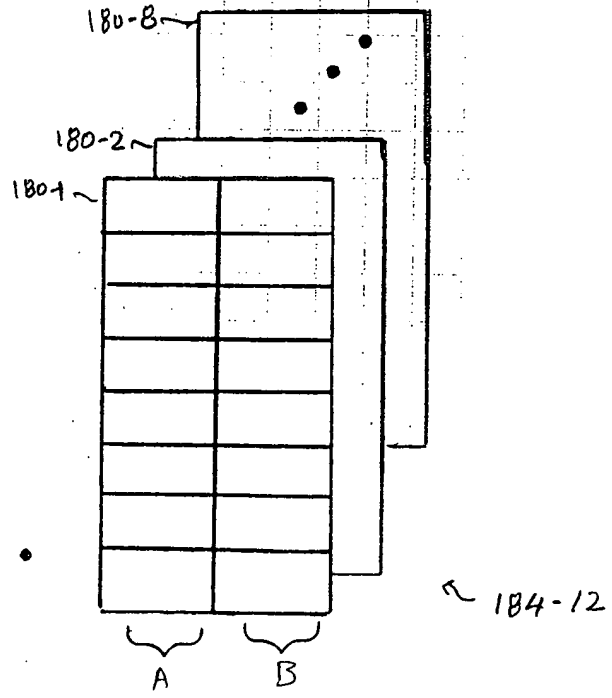


FIG. 9



...



NOTED: 30E07560

The diagram illustrates a multi-slot optical communication system architecture, organized into two main sections: **Shelf 1** and **Rack 1**.

Shelf 1 (Left Section):

- Contains two **CSTG** (Control Signal Transceiver Group) blocks, each labeled **111** and **112**.
- Each CSTG block is connected to a **CDTM** (Control Data Transceiver Module) block, labeled **114**.
- The CDTM blocks are connected to a central switching network labeled **182-1**.

Rack 1 (Right Section):

- Contains two main processing blocks: **BPA** (Baseband Processor A) and **BPB** (Baseband Processor B).
- Each BPA/BPB block contains multiple **CPCI Slot** units. Specifically, BPA has slots **1** and **8**, and BPB has slots **1** and **8**.
- Each CPCI Slot contains a **BCTM** (Baseband Control Transceiver Module) block, labeled **116**.
- The BCTM blocks are connected to a central switching network labeled **182-2**.

Interconnections:

- The central switching network **182-1** is connected to the central switching network **182-2** via a crossbar switch labeled **182**.
- Additional connections are shown between the CDTM and BCTM blocks, labeled **188A**, **188B**, and **188C**.

Fig. 10B

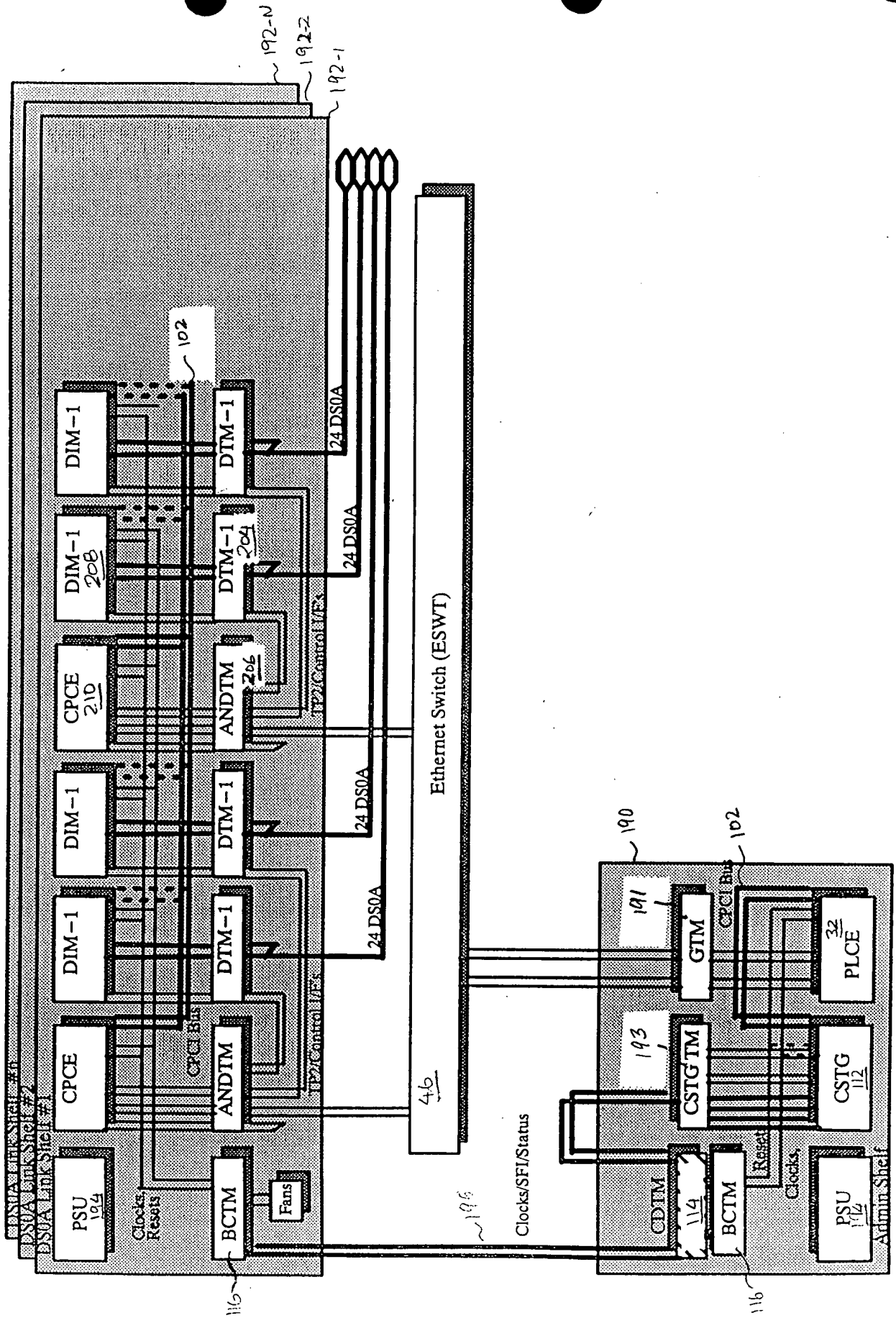
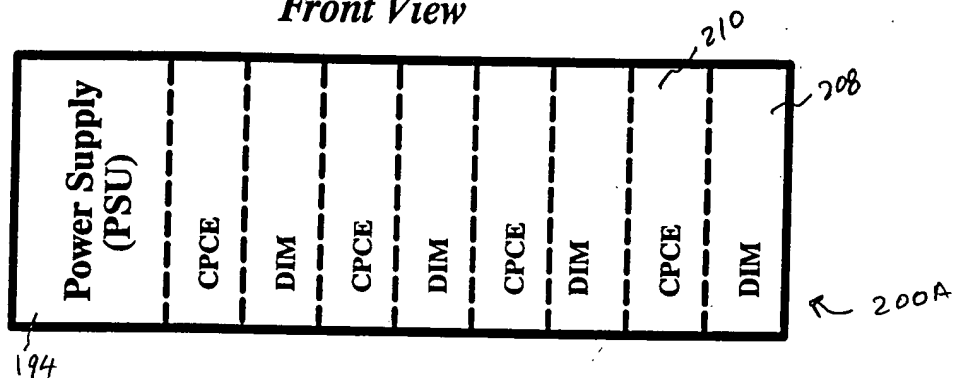


FIG. 10C

Front View



Top View

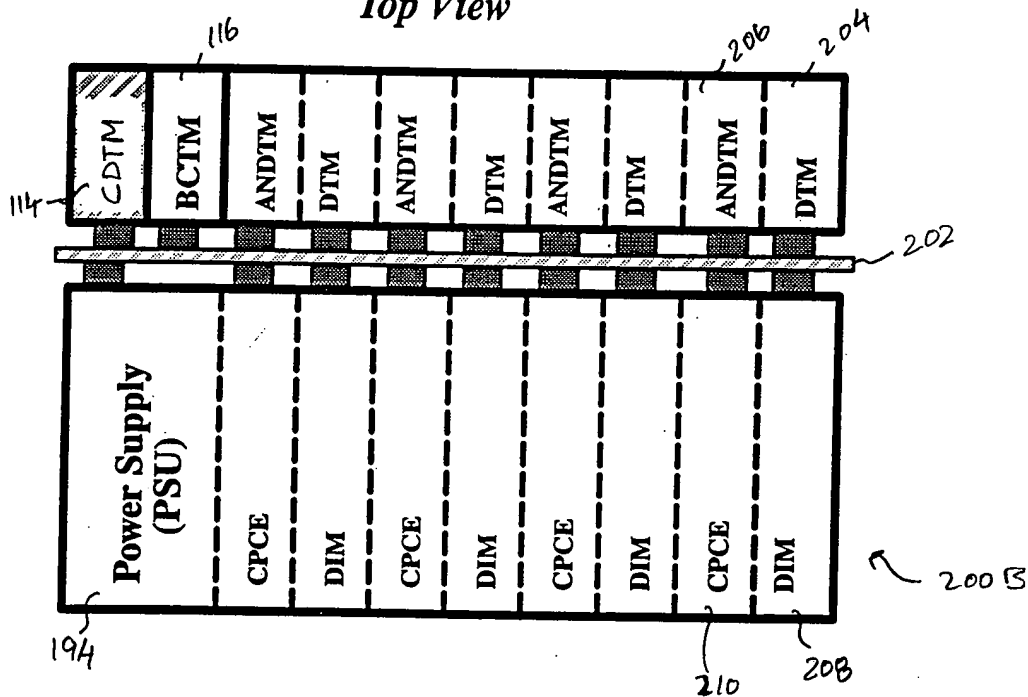
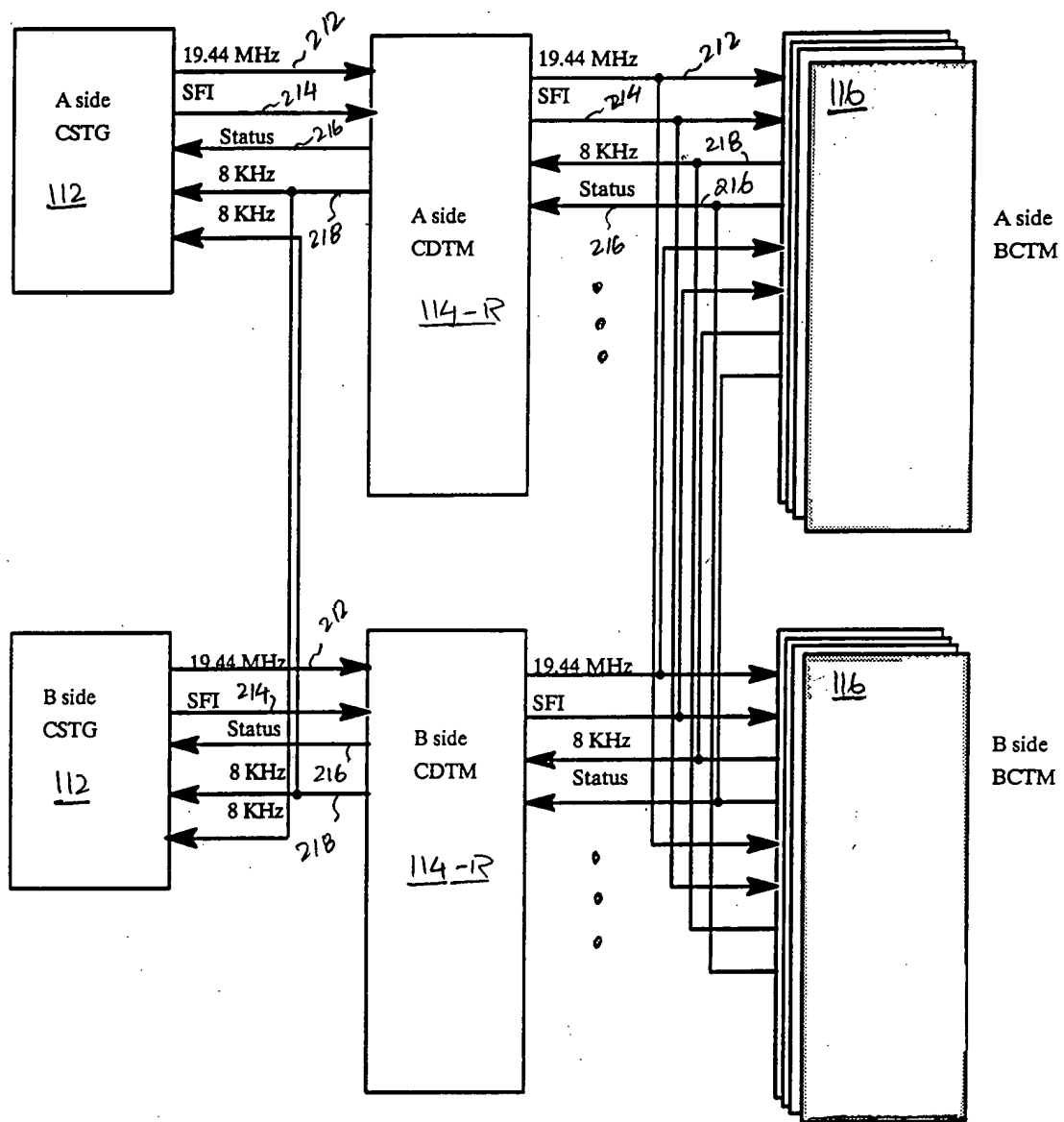
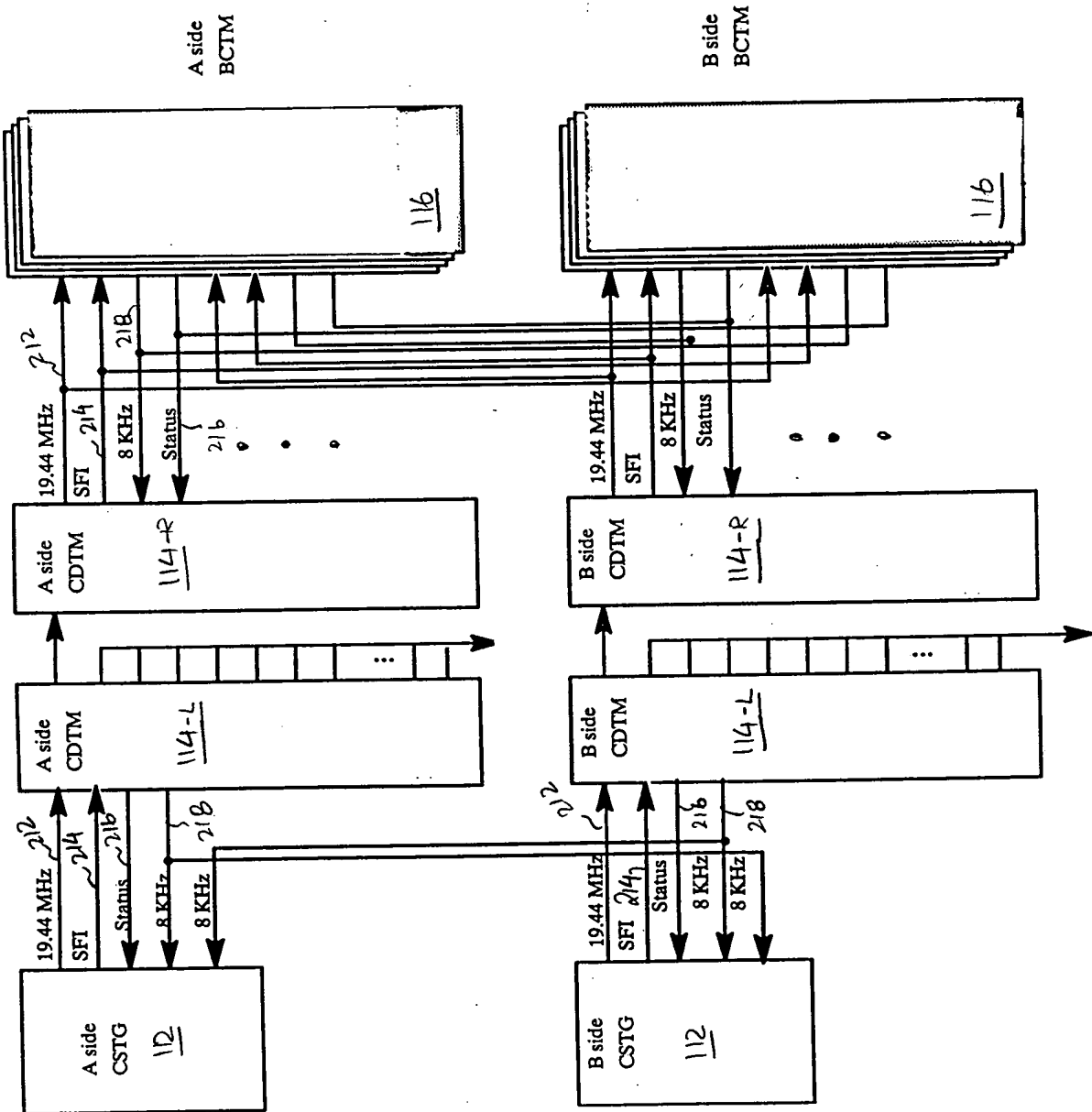


FIG. 11A



OFFERED "30000000"

FIG. 11B



CODED SECTION

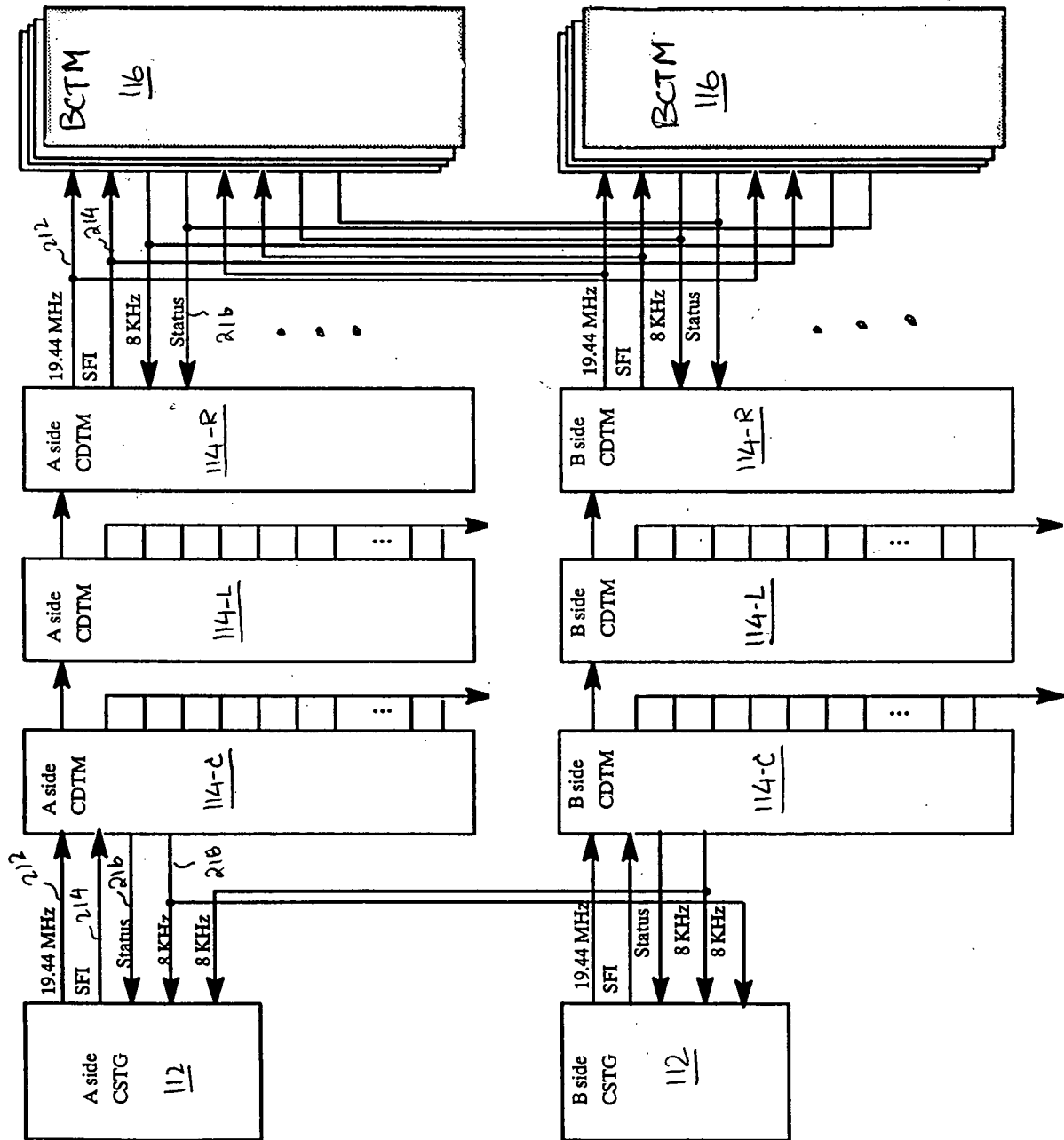


Fig. 11C

FIG. 12A

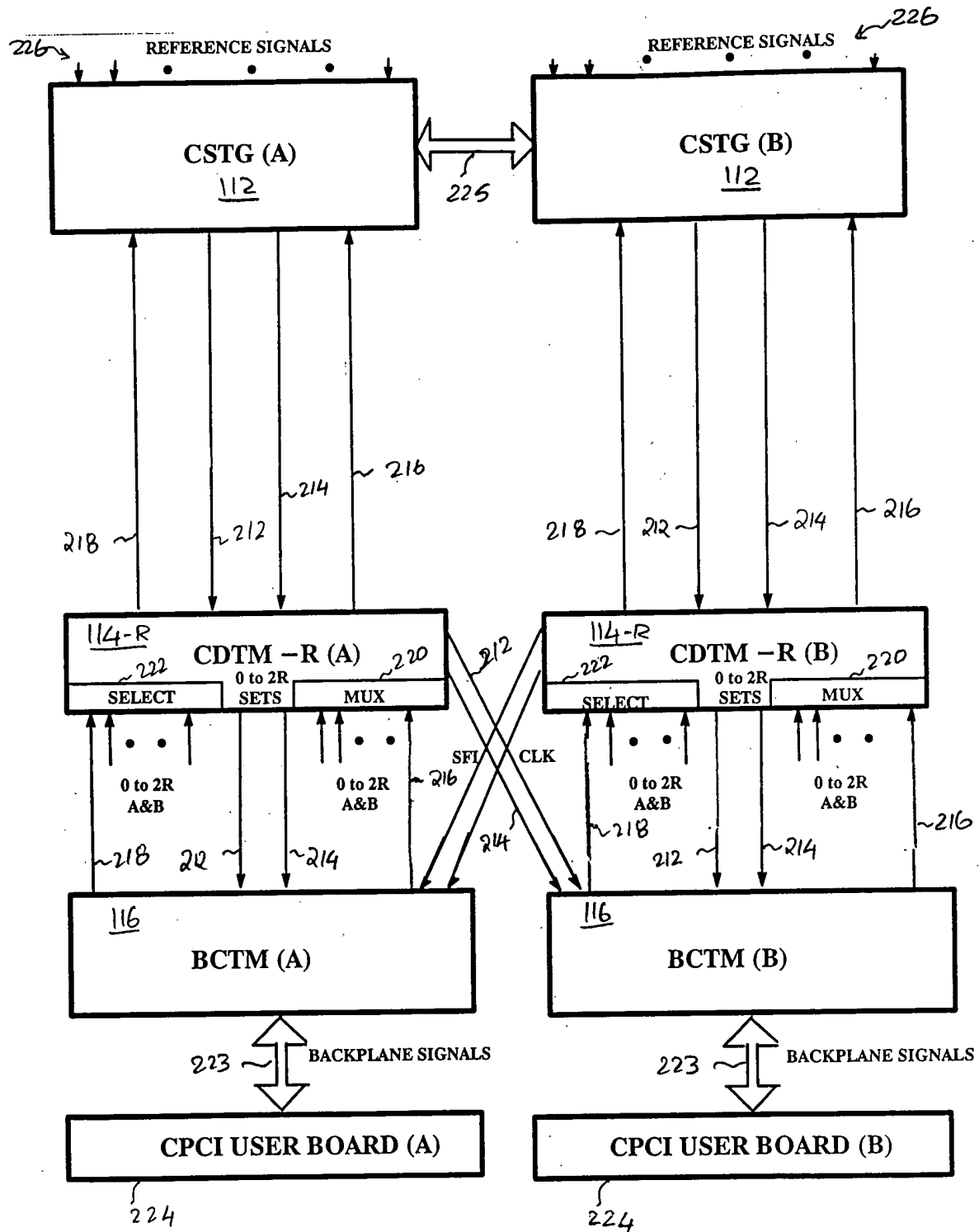


FIG. 12B

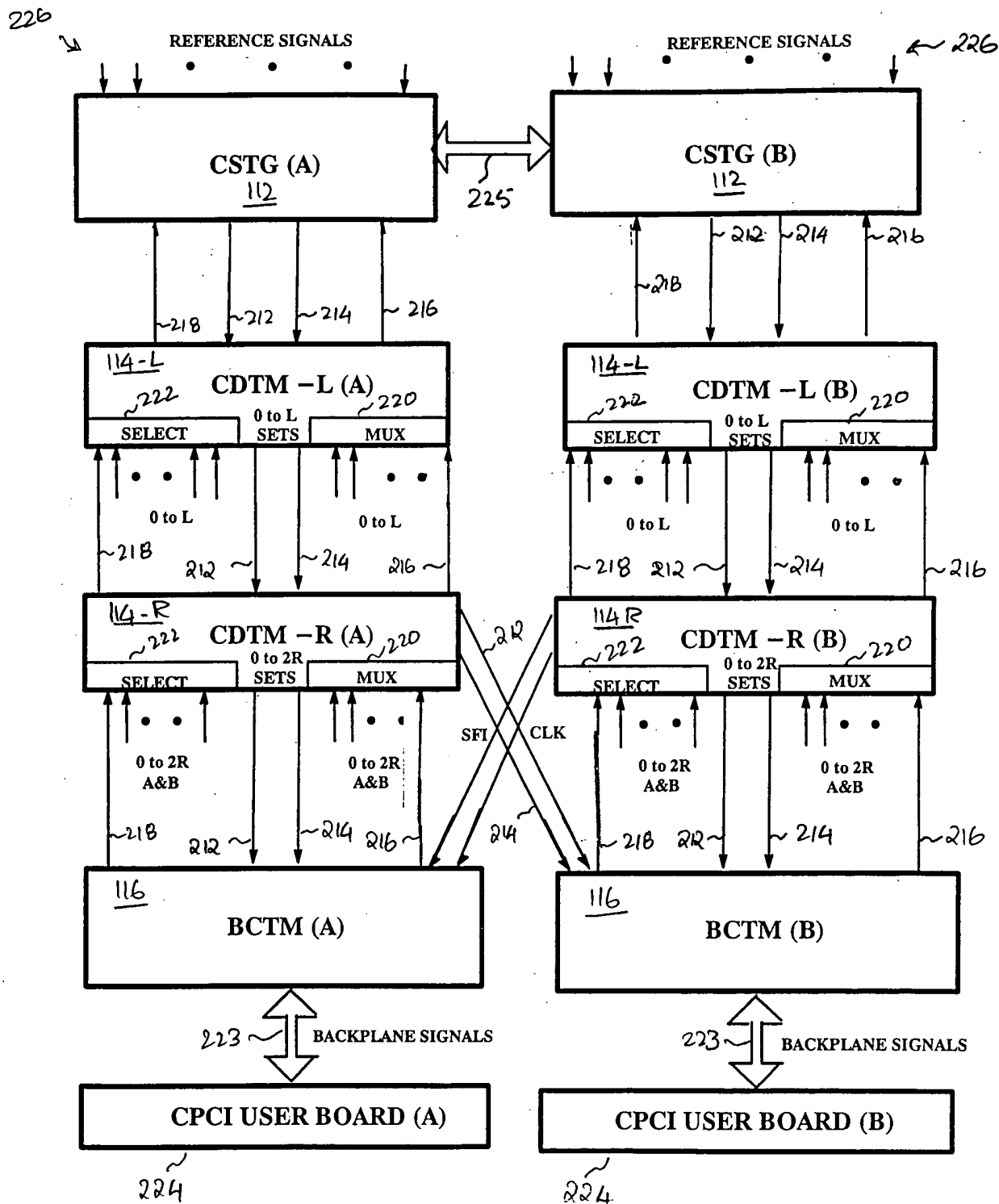


FIG. 12C

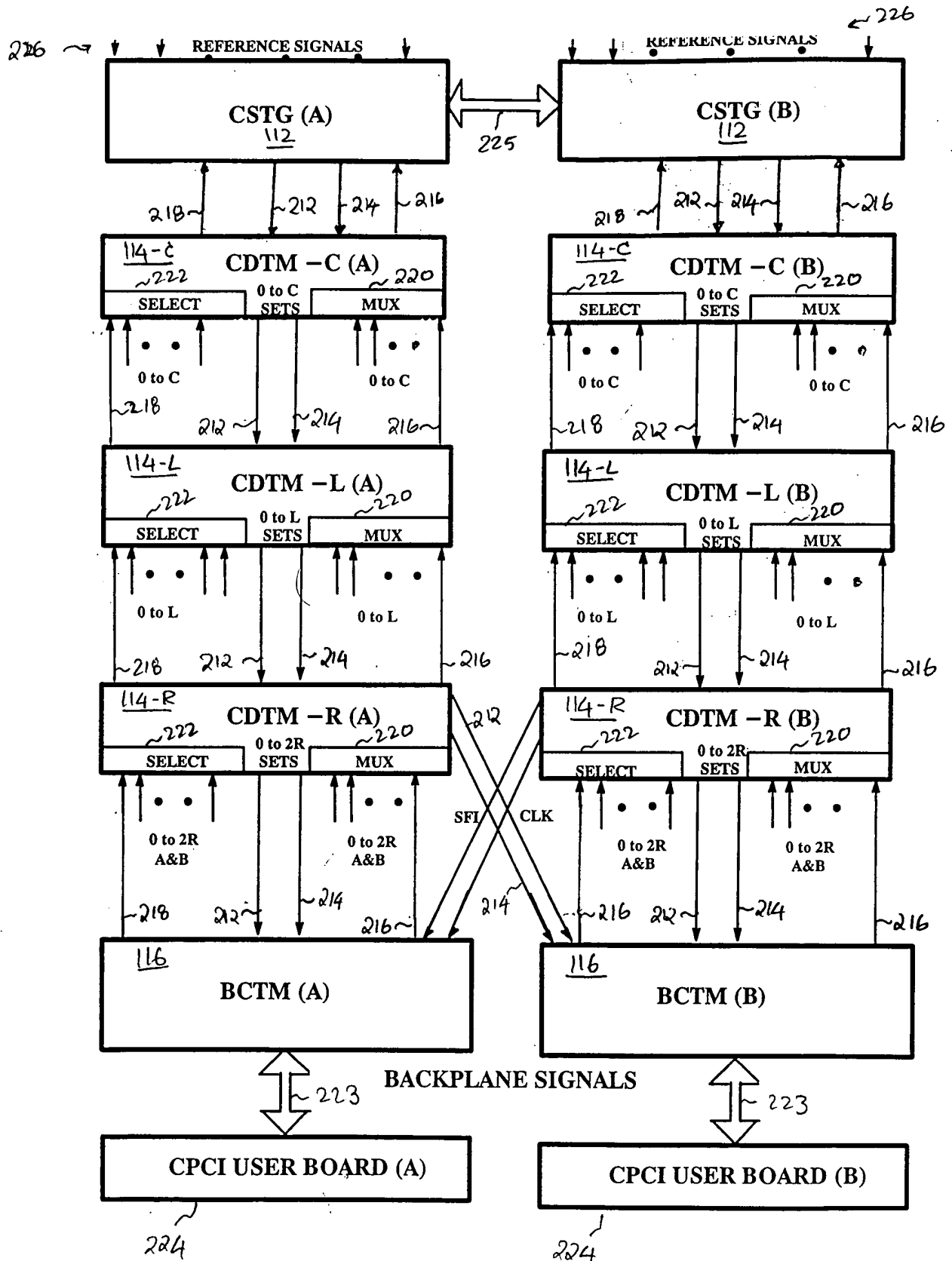


FIG. 13 A

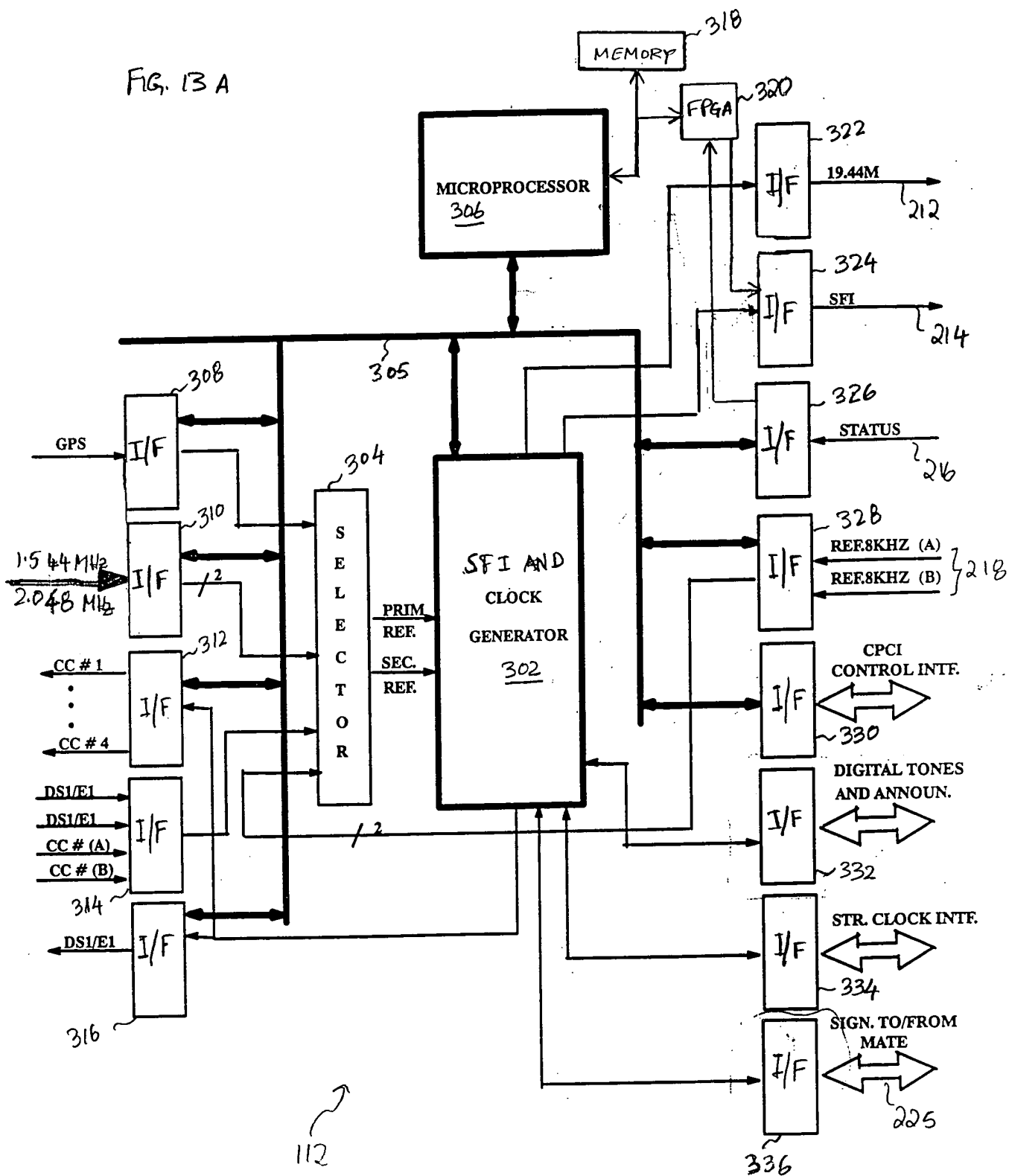


FIG. 13 B

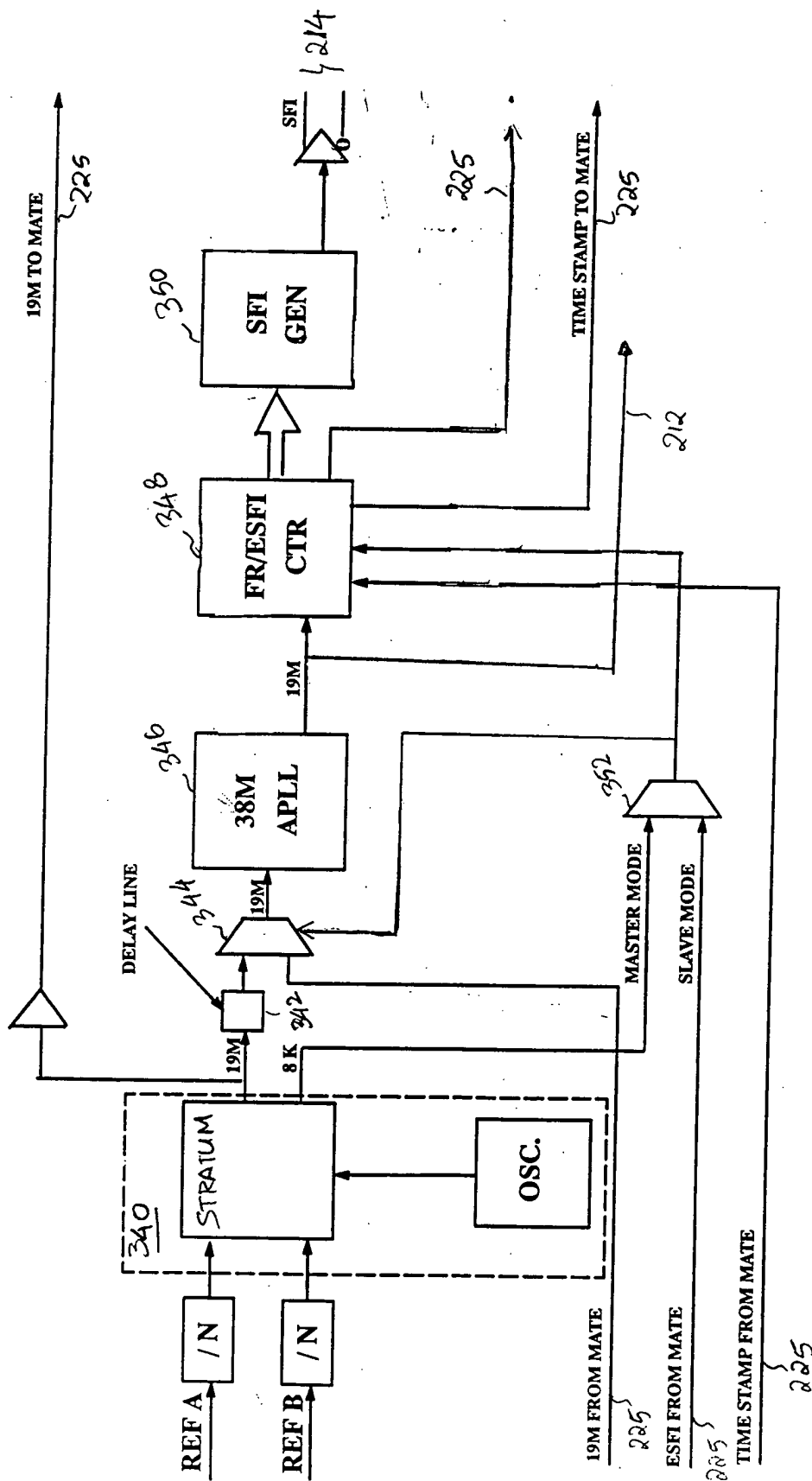


FIG. 14

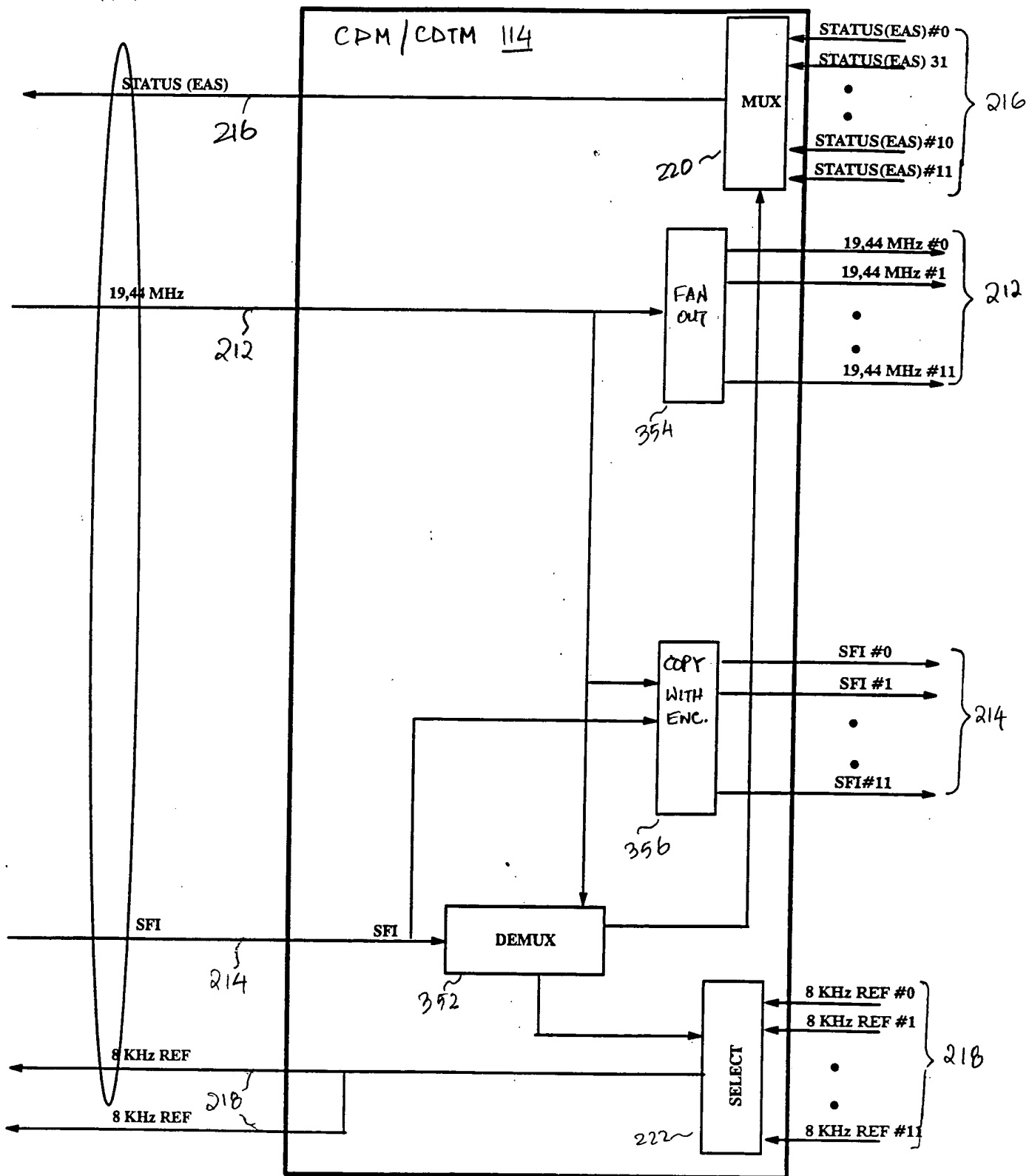
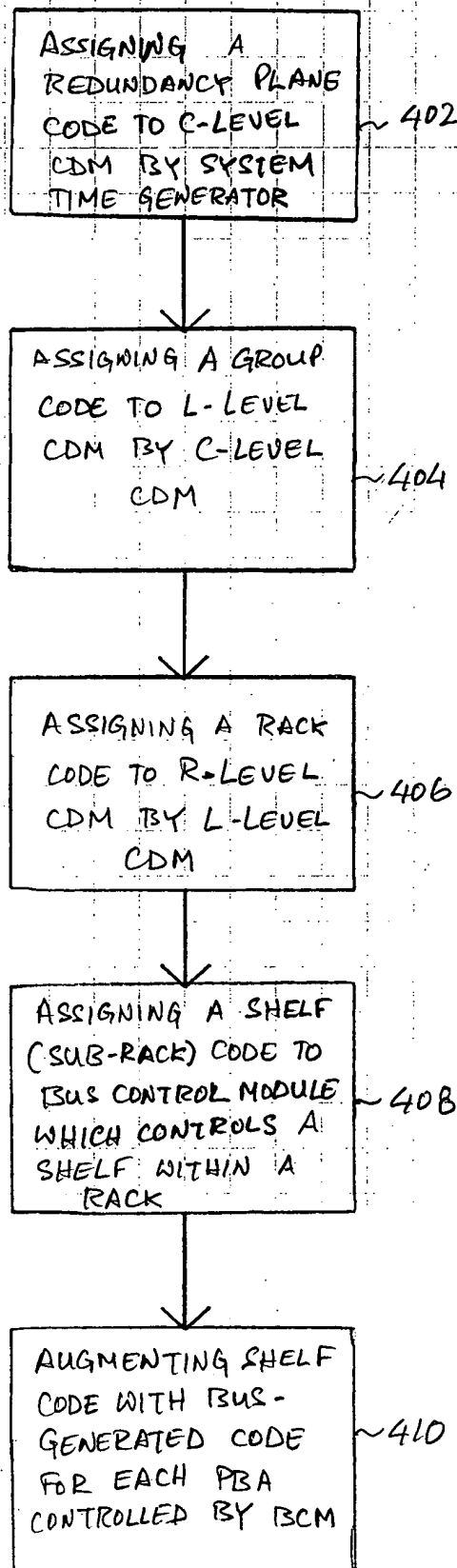


FIG. 15



OUTFED-30204560

Fig. 16

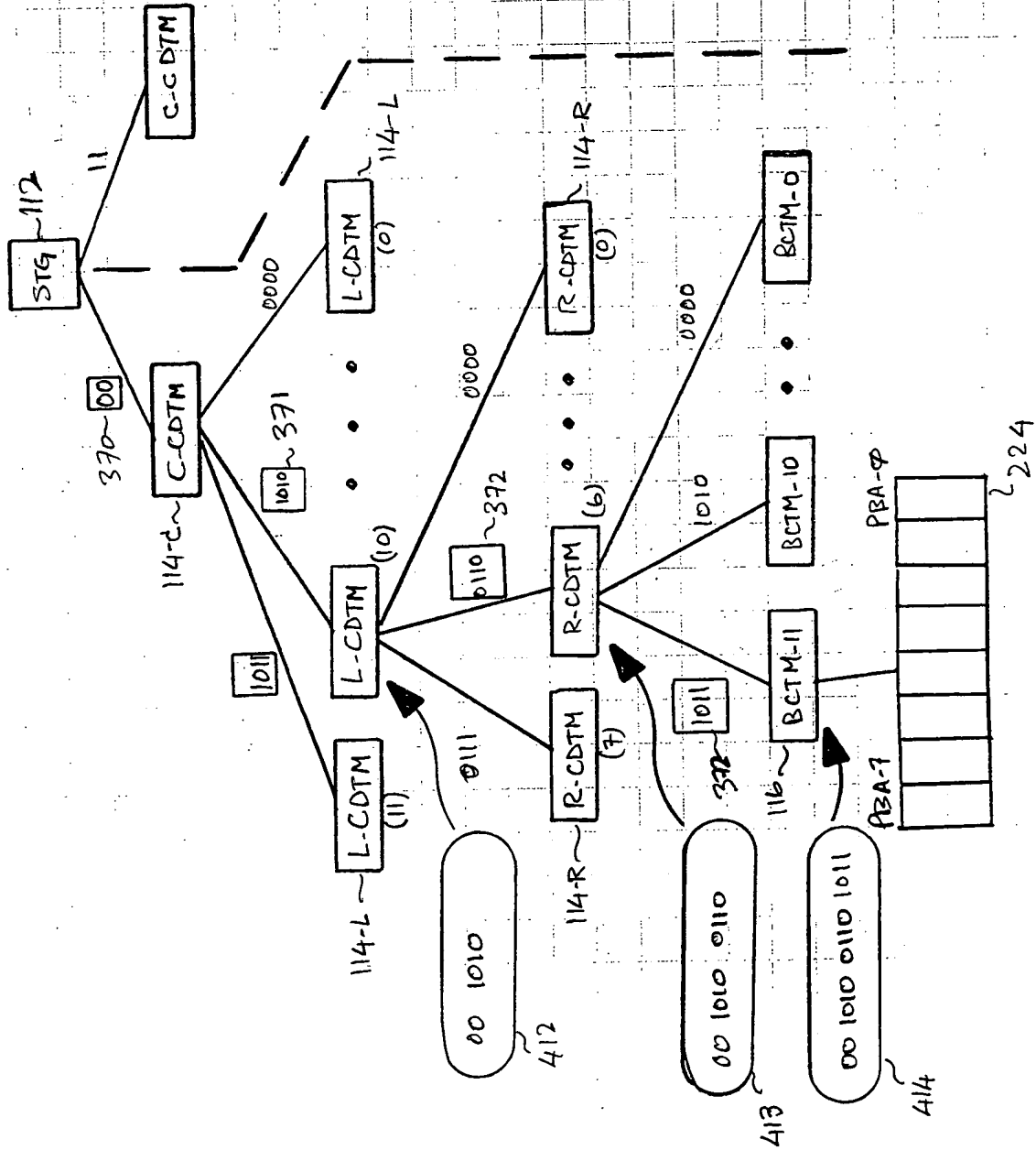


FIG. 17A

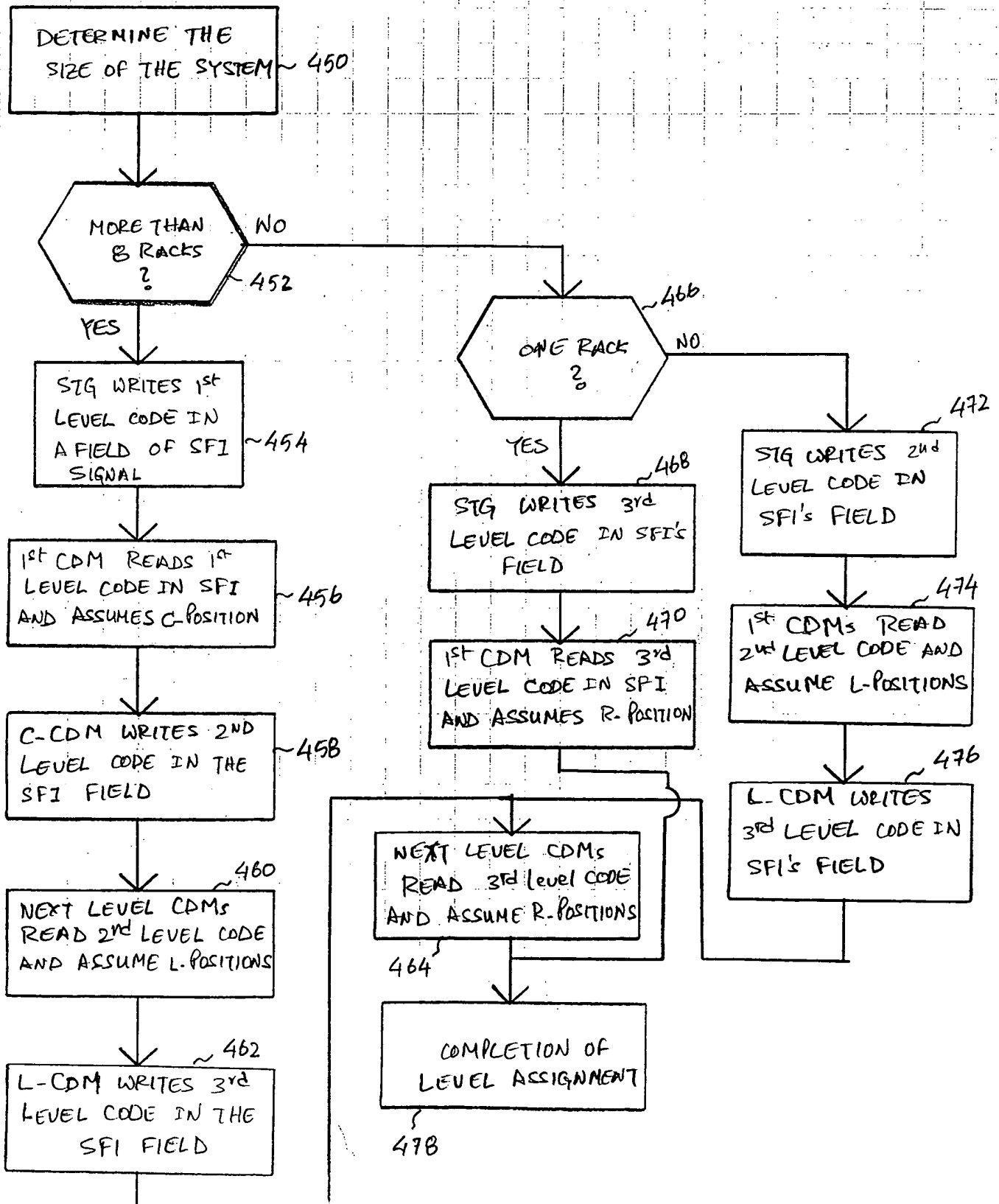
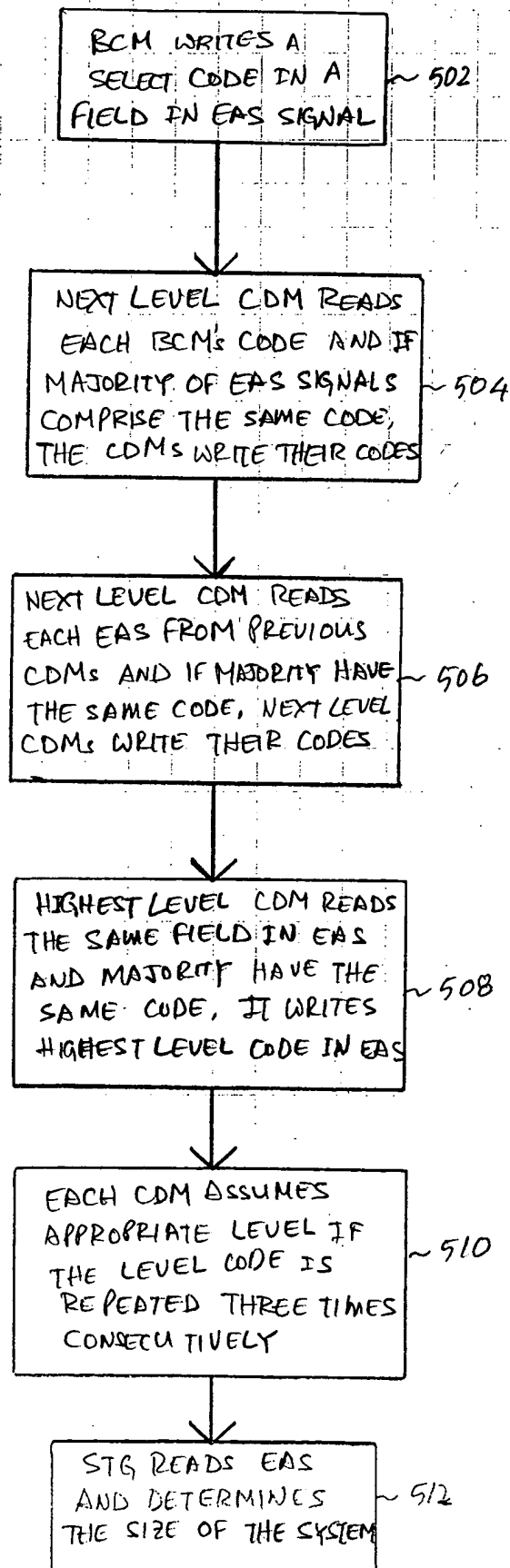
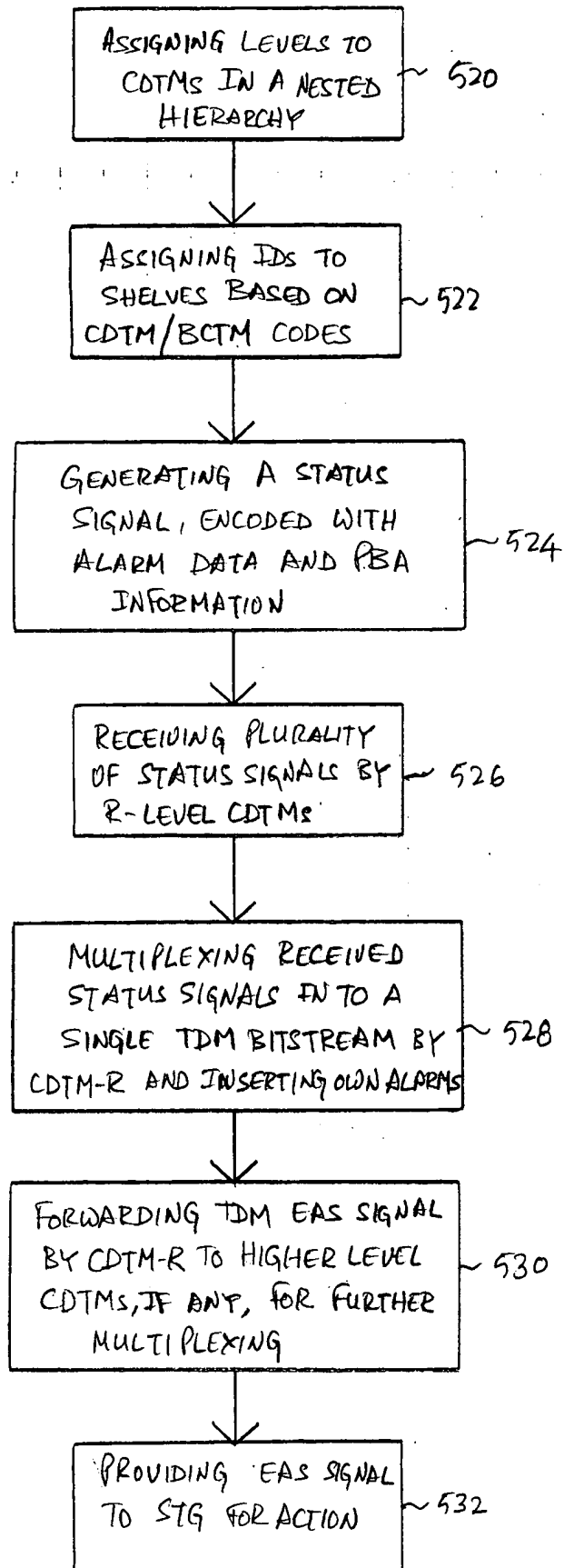


FIG. 17B



NOTED: 80E04560

FIG. 1B



DATE: 03/04/00

FIG. 19A

COPYED 30E04360

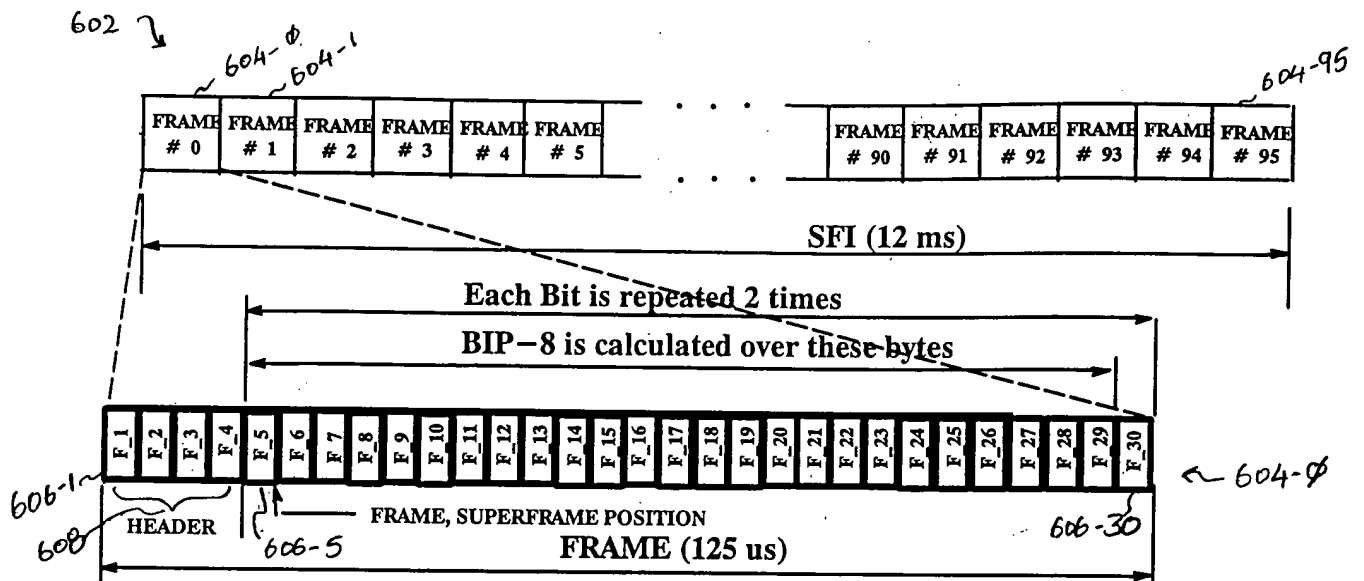
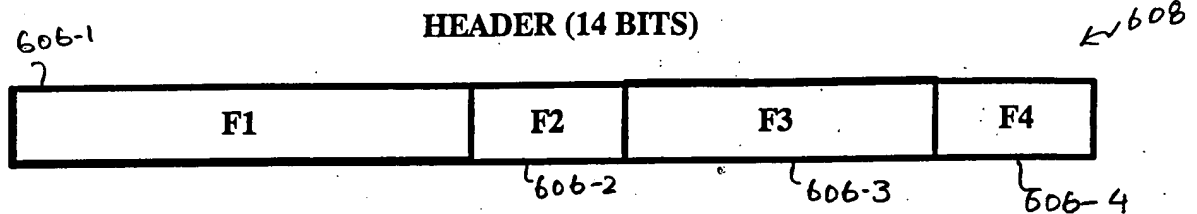


Fig. 19B



F1: 6 BITS FOR SYNCHRONIZATION (010101)

F2: 2 BITS FOR TIME STAMP (11 EVERY 68th SFIs, 00 in the rest)

F3: RESERVED

F4: 2 BITS FOR PLANE ID (00 FOR PLANE "A" AND 11 FOR PLANE "B")

Fig. 19C

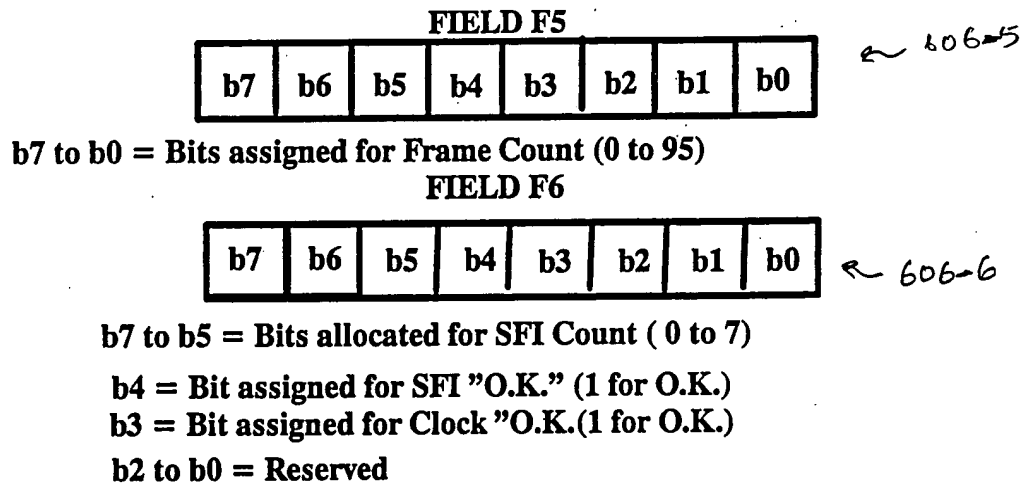


FIG. 19D

FIELD F7

6 BYTES ALLOCATED FOR TOD

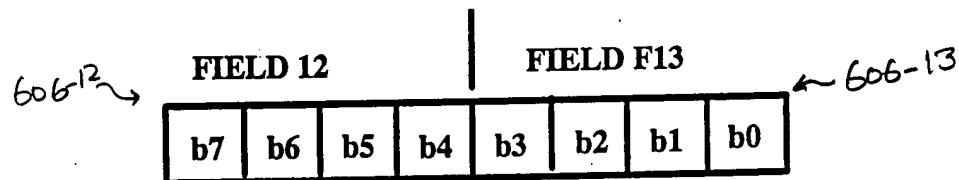
~ 606-7

FIELD F8

64 BYTES FOR TONE Bus

~ 606-8

FIG. 19F



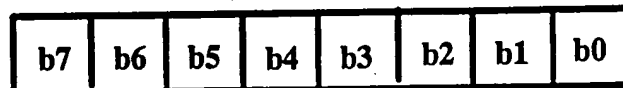
b7 TO b4 : MSN FOR SHELF ID; IT IS INSERTED BY CDTM HIGHEST LEVEL

EACH PORT IS ASSIGNED A VALUE FROM 0000 TO 1011

b3 TO b0 : SECOND NIBBLE OF THE SHELF ID INSERTED BY CDTM INTERMEDIATE

EACH PORT IS ASSIGNED A VALUE FROM 0000 TO 0111

FIELD F14



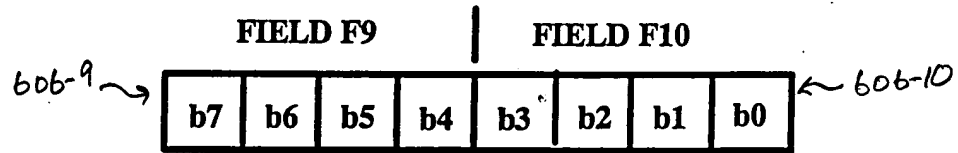
← 606-14

b7 TO b4 : LSN FOR SHELF ID INSERTED BY CDTM LOWEST LEVEL

EACH PORT IS ASSIGNED A VALUE FROM 0000 TO 1011

b3 TO b0 : RESERVED

FIG. 19E

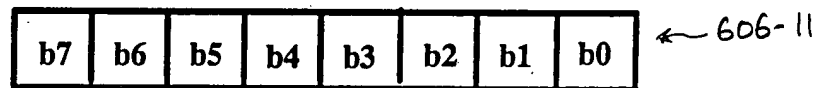


b7 TO b4 : MSN FOR SHELF ID; IT IS INSERTED BY CDTM HIGHEST LEVEL

EACH PORT IS ASSIGNED A VALUE FROM 0000 TO 1011

b3 TO b0 : SECOND NIBBLE OF THE SHELF ID INSERTED BY CDTM INTERMEDIATE

EACH PORT IS ASSIGNED A VALUE FROM 0000 TO 0111

FIELD F11

b7 TO b4 : LSN FOR SHELF ID INSERTED BY CDTM LOWEST LEVEL

EACH PORT IS ASSIGNED A VALUE FROM 0000 TO 1011

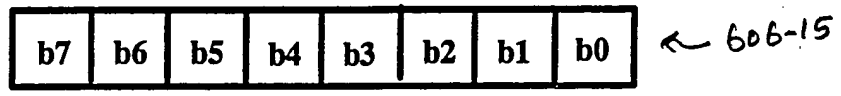
b3 TO b0 : RESERVED

NOTED: 30E04560

1285-0007

Fig. 19G

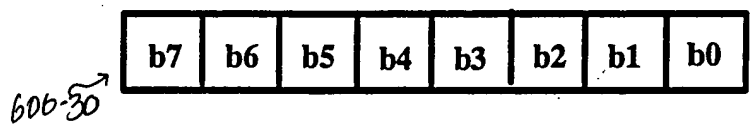
FIELD #15 (F15)



- b7:** indicate that a clock is selected by the CDTM Highest Level
- b7 = 0** (no clock selected)
- b7 = 1** (one of 12 clocks selected)
- b6 to b3:** the code of the port selected (0000 to 1011)
- b2 = Bit** set to force the alarms
- b1, b0 = Reserved**

Fig. 19M

FIELD #30 (F30)



- b7 to b0:** Bits for parity check (BIP-8)
- BIP-8 IS AN "EVEN" PARITY CHECK**

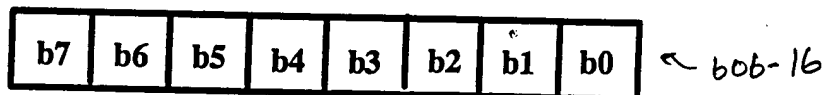
NOTED: 80604500

1285-0007

30

Fig. 194

FIELD #16 (F16)



b7: indicate that a clock is selected by the CDTM Middle Level

b7 = 0 (no clock selected)

b7 = 1 (one of 8 clocks selected)

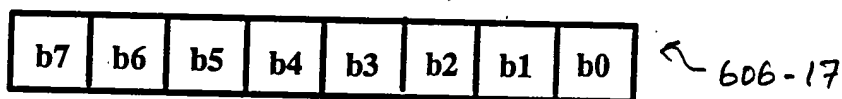
b6 to b3: the code of the port selected (0000 to 0111)

b2 = Bit set to force the alarms

b1, b0 = Reserved

Fig. 191

FIELD #17(F17)



b7: indicate that a clock is selected by the CDTM Lowest Level

b7 = 0 (no clock selected)

b7 = 1 (one of 12 clocks selected)

b6 to b3: the code of the port selected (0000 to 1011)

b2 = Bit set to force the alarms

b1, b0 = Reserved

NOTED: 606-16

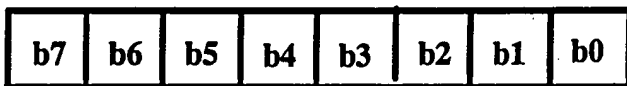
1285-0007

FIG. 19J

FIELD #F18 TO #F27

606-18
To
606-27

Byte #1

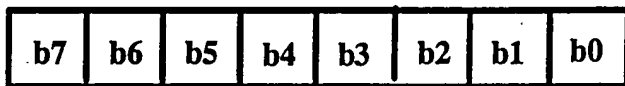


← 609-1

- b7 = 1 RESET SLOT #0
- b6 = 1 RESET SLOT #1
- b5 = 1 RESET SLOT #2
- b4 = 1 RESET SLOT #3

- b3 = 1 RESET SLOT #4
- b2 = 1 RESET SLOT #5
- b1 = 1 RESET SLOT #6
- b0 = 1 RESET SLOT #7

Byte #2

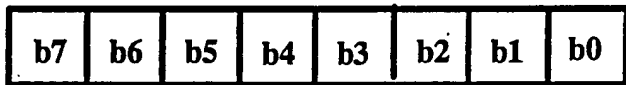


← 609-2

- b7 = 1 RESET BCTM
- b6 = 1 RESET ESWT#1
- b5 = 1 RESET ESWT#2
- b4 = 1 RESET RESERVED

- b3 = Bit set to loop back 8 KHz
- b2 = I1
- b1 = I2
- b0 = I3

Byte #3

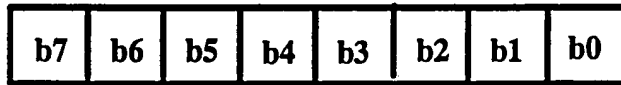


← 609-3

- b7 = PWR DOWN SLOT #0
- b6 = PWR DOWN SLOT #1
- b5 = PWR DOWN SLOT #2
- b4 = PWR DOWN SLOT #3

- b3 = PWR DOWN SLOT #4
- b2 = PWR DOWN SLOT #5
- b1 = PWR DOWN SLOT #6
- b0 = PWR DOWN SLOT #7

Byte #4



← 609-4

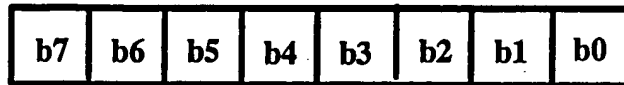
- b7 = 1: Clock Selected by BCTM
- b6 TO b4: the code of selected clock (000 to 111)

- b3, b2 = Plane selection (A or B)
- b1 = Turn ON/OFF rack alarm
- b0 = 1: Force Shelf Alarms

00111000000000000000000000000000

FIG. 19K

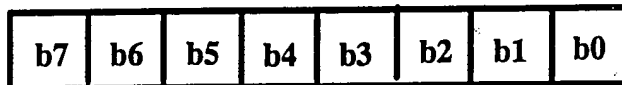
Byte #5



↪ 609-5

b7 to b4 = Bits allocated for SSM code
 b3 = Bit set to inhibit errors reporting on plane from Plane A
 b2 = Bit set to indicate errors reporting from Plane B
 b1, b0 = Reserved

Byte #6



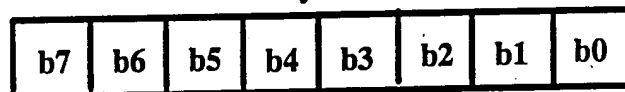
↪ 609-6

b7 to b0 : Bits allocated to tristate all backplane signals per PBA.

FIG. 19L

FIELD F29

Byte #1

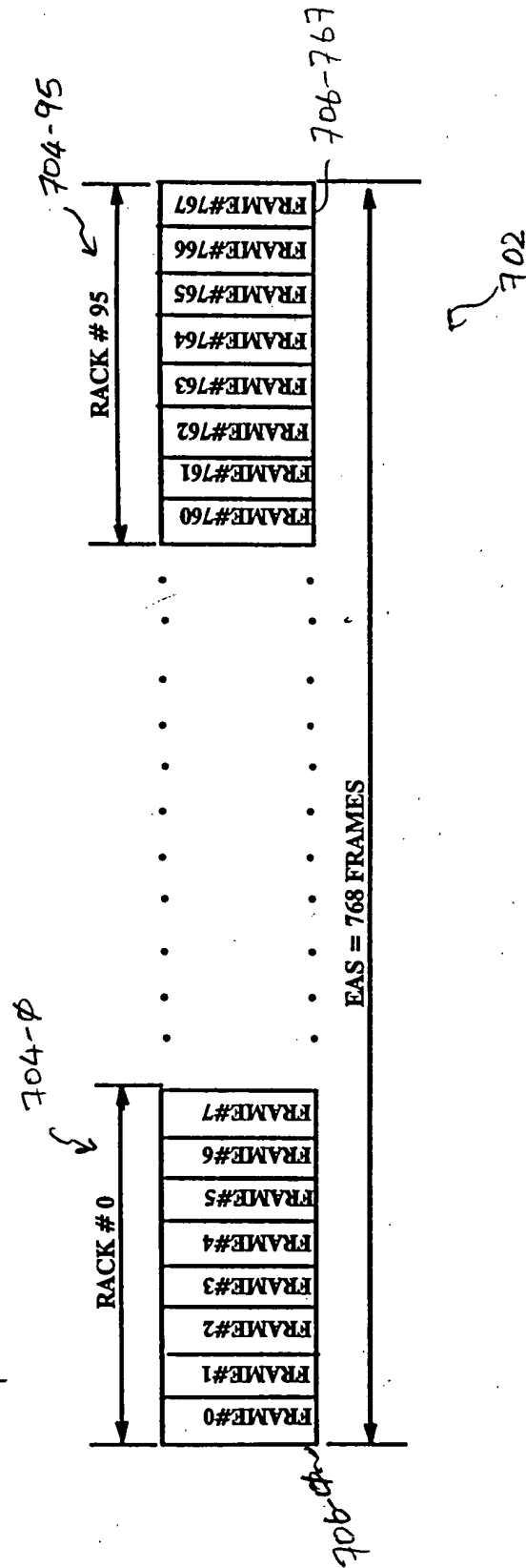


↪ 606-29

b7 = Reserved
 b6 = Bit allocated for Heartbeat
 b5 = Bit allocated for Critical Indicator
 b4 = Bit allocated for Major Indicator
 b3 = Bit allocated for Minor Indicator
 b2 = Bit allocated for Critical Audible
 b1 = Bit allocated for Major Audible
 b0 = Bit allocated for Minor Audible

NOTED - 30304500

Fig. 20A

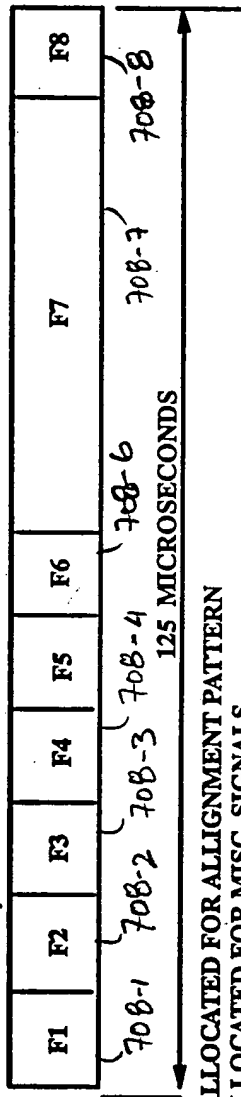


1285-0007

FIG. 20B

706-0

FRAME # 0 (THIS FRAME IS ALLOCATED FOR CDM HIGHEST LEVEL)



- F1 = 1 BYTE ALLOCATED FOR ALIGNMENT PATTERN
 - F2 = 1 BYTE ALLOCATED FOR MISC. SIGNALS
 - F3 = 2 BYTES ALLOCATED FOR STATUS LOA
 - F4 = 2 BYTES ALLOCATED FOR INBOUND ERRORS (ONE BIT PER PORT)
 - F5 = 1 BYTE ALLOCATED FOR CLOCK SELECTION
 - F6 = 4 BITS ALLOCATED FOR BIP -4
 - F7 = 7.5 BYTES RESERVED
 - F8 = 1.5 BITS EMPTY FIELD (FORCED TO "0")
- NOTE: ALL FRAMES # N X 64 (N = 1 TO 11) ARE EMPTY

FIG. 20c

FRAME # 0

FIELD F1

b7	b6	b5	b4	b3	b2	b1	b0
----	----	----	----	----	----	----	----

← 708-1

b7 to b0 = "00111100" : Pattern generated by each CDTM and BCTM cards

FIELD F2

b7	b6	b5	b4	b3	b2	b1	b0
----	----	----	----	----	----	----	----

← 708-2

b7, b6 = Reserved

b5 = Bit set when outbound SFI errors are detected

NOTE: Outbound errors: "two bits violations" or BIP-8 only for Frame #0 of the SFI

b4 = Bit set when one of the STATUS signal is in LOS (except for the unused ports)

b3 = Bit set when the selected 8KHz is in LOC

b2, b1 = Bit assigned to indicate the Level of the CDTM (11 for L1, 10 for L2 and 01 for L3)

b0 = Bit assigned to indicate the Plane (0 for A and 1 for B)

FIELD F3 (BTE #1)

b7	b6	b5	b4	b3	b2	b1	b0
----	----	----	----	----	----	----	----

← 708-3

b7 to b0 = Bits assigned to indicate STATUS LOA ports #0 to 7

FIELD F3 (BYTE #2)

b7	b6	b5	b4	b3	b2	b1	b0
----	----	----	----	----	----	----	----

← 708-3

b3 to b0 = Bits assigned for STATUS LOA #8 to 12

b7 to b4 = Bits allocated for CDTM level assignment

NOTED: 30E04560

FIELD F4 (BYTE #1)

b7 to b0 Bits assigned to indicate STATUS LOS on ports # 0 to 7

70B-4

FIELD F4 (BYTE # 2)

b7 to b0 Bits assigned to indicate STATUS LOS on ports # 8 to 12

FIELD F5

708-5

b1 = Bit asserted by CDTM Highest Level to indicate that a system alarm has occurred in the previous EAS

FIELD F6

← 70B-6

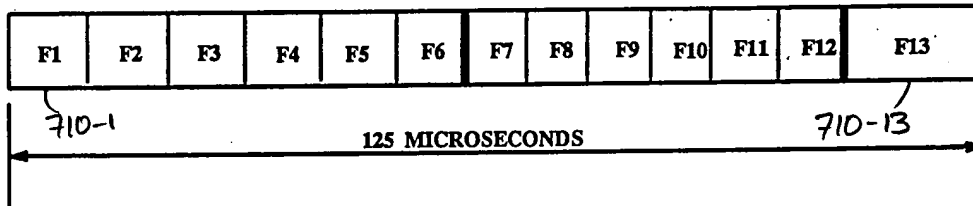
b3 to b0 = Bits assigned for BIP-4

1285-0007

FIG. 20 E

FRAME # $1 + 64 \times N$ ($N = 0$ TO 11): THESE FRAMES ARE ALLOCATED FOR CDTM MIDDLE LEVEL

FRAME # $1 + 8 \times N$ ($N = 0$ TO 95): THESE FRAMES ARE ALLOCATED FOR CDTM LOWEST LEVEL



CDTM MIDDLE LEVEL

- F1 = 1 BYTE ALLOCATED FOR MISC. SIGNALS
- F2 = 1 BYTE FOR CARD ID
- F3 = 2 BYTES ALLOCATED FOR STATUS LOA
- F4 = 2 BYTES ALLOCATED FOR INBOUND ERRORS (ONE BIT PER PORT)
- F5 = 1 BYTE ALLOCATED FOR CLOCK SELECTION
- F6 = 4 BITS ALLOCATED FOR BIP-4

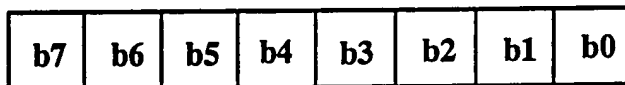
CDTM LOWEST LEVEL

- F7 = 1 BYTE ALLOCATED FOR MISC. SIGNALS
- F8 = 1 BYTE FOR CARD ID
- F9 = 2 BYTES ALLOCATED FOR STATUS LOA
- F10 = 2 BYTES ALLOCATED FOR INBOUND ERRORS
- F11 = 1 BYTE ALLOCATED FOR CLOCK SELECTION
- F12 = 4 BITS ALLOCATED FOR BIP-4
- F13 = 1.5 BITS EMPTY FIELD (FORCED TO "0")

FIG. 20 F

FRAME # $1 + 64 \times N$ ($N = 0$ TO 11): THESE FRAMES ARE ALLOCATED FOR CDTM MIDDLE LEVEL

FIELD F1



b7 = Reserved

b6 = Reserved

b5 = Bit set when outbound SFI errors are detected

NOTE: Outbound errors: "two bits violations" or BIP-8 only for Frame #0 of the SFI

b4 = Bit set when one of the STATUS signal is in LOS (except for the unused ports)

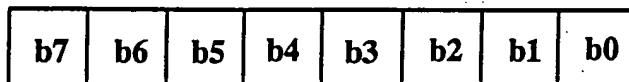
b3 = Bit set when the selected 8KHz is in LOC

b2, b1 = Bit assigned to indicate the Level of the CDTM (11 for L1, 10 for L2 and 01 for L3)

b0 = Bit assigned to indicate the Plane (0 for A and 1 for B)

FIG. 20G

FIELD F2

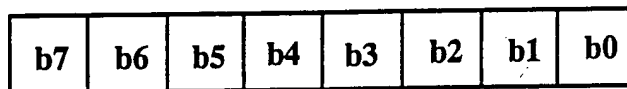


710-2

b7 to b4 = Bits assigned to indicate the CDTM ID

b3 to b0 = Reserved

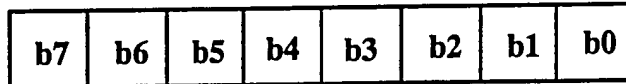
FIELD F3 (BYTE #1)



b7 to b0 = Bits assigned to indicate STATUS LOA ports #0 to 7

710-3

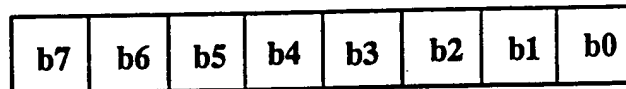
FIELD F3 (BYTE #2)



b7 to b0 = Bits assigned to indicate STATUS LOA ports #8 to 12 (will be masked)

FIG. 20H

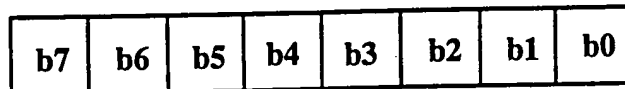
FIELD F4 (BYTE #1)



b7 to b0 Bits assigned to indicate STATUS LOS on ports # 0 to 7

710-4

FIELD F4 (BYTE # 2)



b7 to b0 Bits assigned to indicate STATUS LOS on ports # 8 to 12 (will be masked)

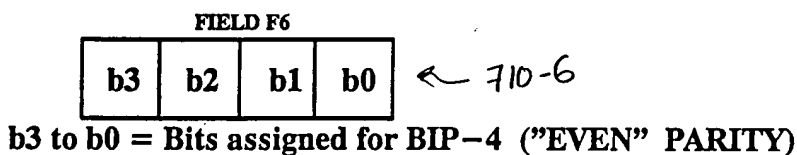
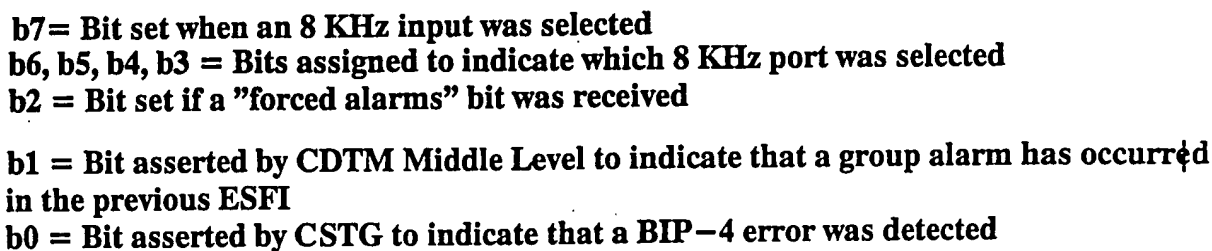
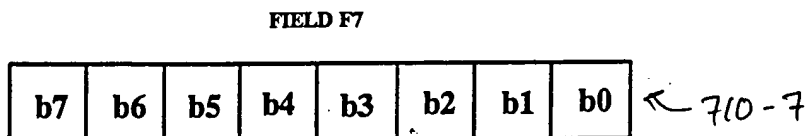
[illegible]

FIG. 20J

FRAME # 1+8 x N (N = 0 to 95) : THESE FRAMES ARE ALLOCATED FOR CDTM LOWEST LEVEL



b7 = Reserved
b6 = Reserved

b5 = Bit set when outbound SFI errors are detected

NOTE: Outbound errors: "two bits violations" or BIP-8 only for Frame #0 of the SFI

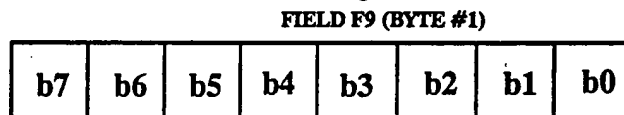
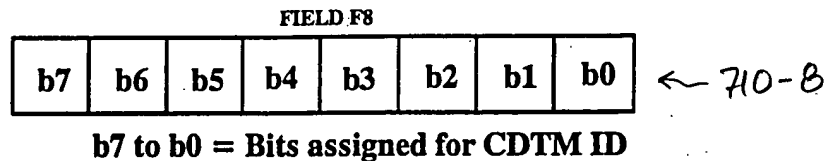
b4 = Bit set when one of the STATUS signal is in LOS (except for the unused ports).

b3 = Bit set when the selected 8KHz is in LOC

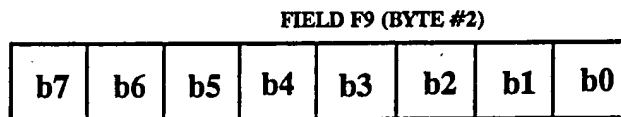
b2, b1 = Bit assigned to indicate the Level of the CDTM (11 for L1, 10 for L2 and 01 for L3)

b0 = Bit assigned to indicate the Plane (0 for A and 1 for B)

FIG. 20K

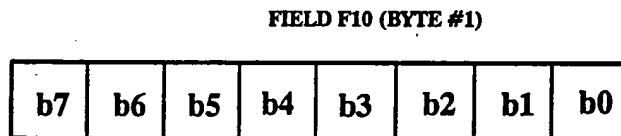


b7 to b0 = Bits assigned to indicate STATUS LOA ports #0 to 7

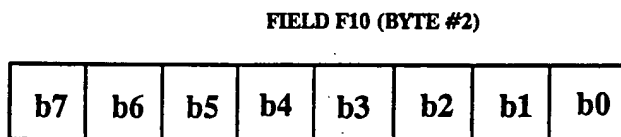


b7 to b0 = Bits assigned to indicate STATUS LOA ports #8 to 15

FIG. 20L



b7 to b0 Bits assigned to indicate STATUS LOS on ports # 0 to 7

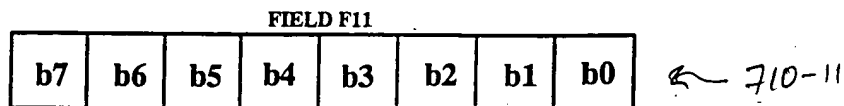


b7 to b0 Bits assigned to indicate STATUS LOS on ports # 8 to 15

1285-0003

(41)

FIG. 20M



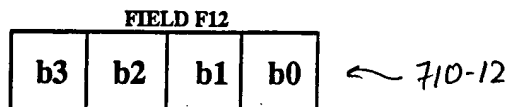
b7 = Bit set when an 8 KHz input was selected

b6, b5, b4, b3 = Bits assigned to indicate which 8 KHz port was selected

b2 = Bit set if a "forced alarms" bit was received

b1 = Bit asserted By CDTM lowest Level to indicate that a rack alarm has occurred in the previous EAS;

b0 = Bit asserted by CSTG to indicate that a BIP-4 error was detected

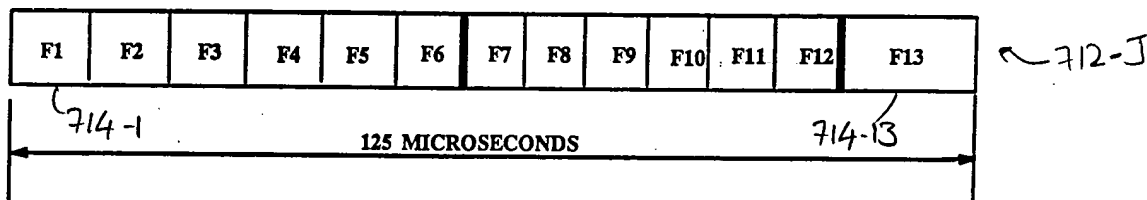


b3 to b0 = Bits assigned for BIP-4 ("EVEN" PARITY)

FIG. 20N

FRAMES # $(2 \text{ to } 7) + 8 \times N$ ($N = 0 \text{ to } 95$)

EACH OF THESE FRAMES ARE ALLOCATED FOR A PAIR OF BCTM CARDS (A&B)



BCTM (A)

F1 = 2 BYTES ALLOCATED FOR ALARMS

F2 = 2 BYTES ALLOCATED FOR SHELF ID AND CLOCK SELECTION

F3 = 1 BYTE ALLOCATED FOR PBA "HEALTH"

F4 = 1 BYTE ALLOCATED FOR PBA "PRESENCE"

F5 = 1 BYTE ALLOCATED FOR MISC.

F6 = 4 BITS ALLOCATED FOR BIP-4

BCTM (B)

F7 = 2 BYTES ALLOCATED FOR ALARMS

F8 = 2 BYTES ALLOCATED FOR SHELF ID AND CLOCK SELECTION

F9 = 1 BYTE ALLOCATED FOR PBA "HEALTH"

F10 = 1 BYTE ALLOCATED FOR PBA "PRESENCE"

F11 = 1 BYTE ALLOCATED FOR MISC.

F12 = 4 BITS ALLOCATED FOR BIP-4

F13 = 1.5 BITS EMPTY FIELD (FORCED TO "0")

DATED: 80E04360

Fig. 200

BCTM (A)
FIELD F1 (BYTE #1)

b7	b6	b5	b4	b3	b2	b1	b0
----	----	----	----	----	----	----	----

← 714-1

b7, b6 = Bits allocated for PSU #1 (A) alarm

b5, b4 = Bits allocated for PSU #2 (B) alarm

b3, b2 = Bits allocated for two Fan alarms

b1, b0 = Bits allocated for ESWT Pwr alarm

FIELD F1 (BYTE #2)

b7	b6	b5	b4	b3	b2	b1	b0
----	----	----	----	----	----	----	----

← 714-1

b7 = Bit allocated for Breaker Panel alarm

b6 = Bit allocated for Temp. control

b5 = Bit allocated to indicate Plane A Lost (LOC, LOS, SFI LOF)

b4 = Bit allocated to indicate Plane B Lost (LOC, LOS, SFI LOF)

b3 = Bit allocated to indicate "Two Bits Violation" or BIP-8 errors Plane A (only for the frame allocated for that particular rack)

b2 = Bit allocated to indicate "Two Bits Violation" or BIP-8 errors Plane B (only for the frame allocated for that particular rack)

b1 = One bit to indicate that a Forced Alarm bit was received

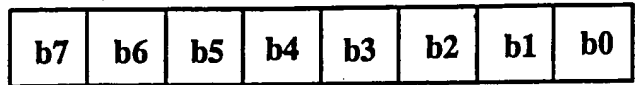
b0 = Reserved

00111011 00001110

1285-0007

Fig. 20P

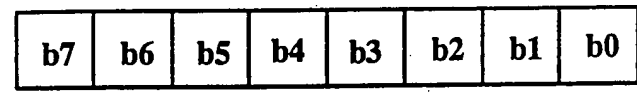
FIELD F2 (BYTE #1)



b7 to b0 = Higher 8 bits of the BCTM ID

714-2

FIELD F2 (BYTE #2)

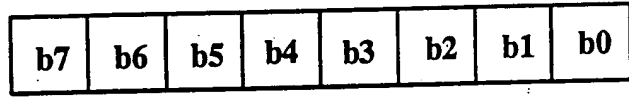


b7 to b4 = Lower 4 bits of the BCTM ID

b3 = Bit set to indicate that an 8 KHz clock was selected

b2 to b0 = Bits allocated to indicate which clock was selected

FIELD F3



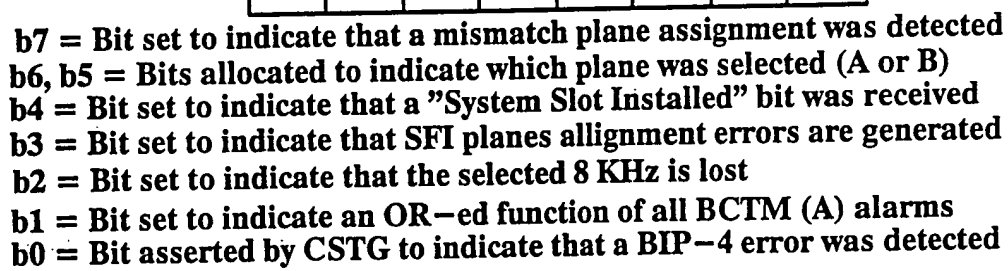
714-3

b7 to b0 = Bits allocated to indicate PBA"Health" from Slot #0 to Slot #7

00110000000000000000000000000000

FIG. 20Q

FIG. 20Q



SECRET

FIELD F7 (BYTE #1)

714-7

b1, b0 = Bits allocated for ESWT Pwr alarm

← 714 - 7

b0 = Reserved

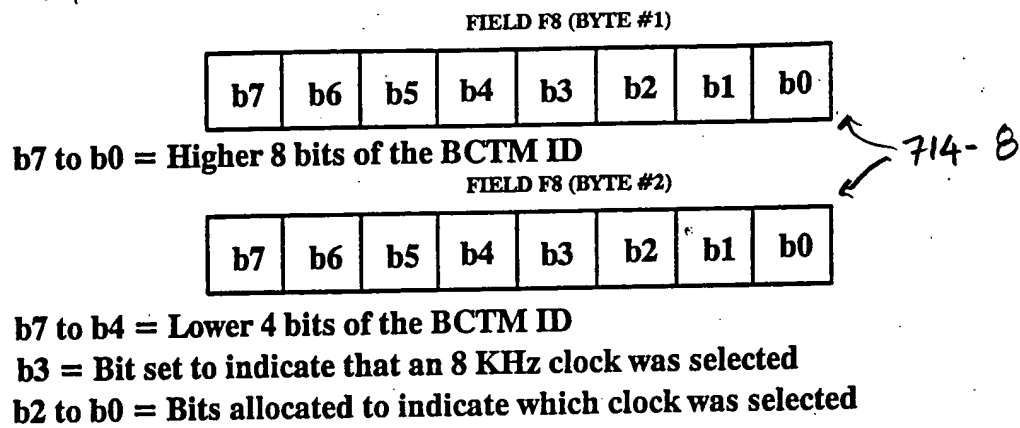
[illegible]

FIG. 20T

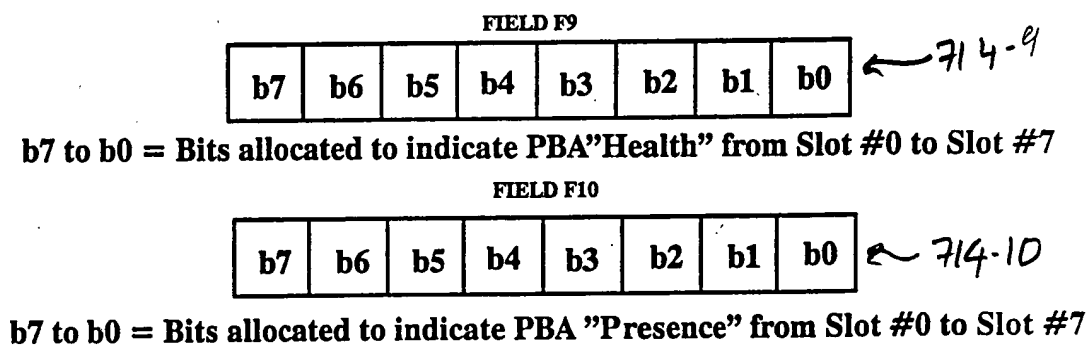


FIG. 20 u

FIELD F11

b7	b6	b5	b4	b3	b2	b1	b0
----	----	----	----	----	----	----	----

← 714-11

- b7 = Bit set to indicate that a plane assignment error was detected
b6, b5 = Bits allocated to indicate which plane was selected (A or B)
b4 = Bit set to indicate that a "System Slot Installed" bit was received
b3 = Bit set to indicate that SFI planes alignment errors are generated
b2 = Bit set to indicate that the selected 8 KHz is lost
b1 = Bit set to indicate an OR-ed function of all BCTM (B) alarms
b0 = Bit asserted by CSTG to indicate that a BIP-4 error was detected

FIELD F12

b3	b2	b1	b0
----	----	----	----

← 714-12

b3 to b0 = Bits allocated for BIP-4